

# CliffsTestPrep®

## GED

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*By*

*Jerry Bobrow, Ph.D.*



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Dr. Jerry Bobrow, Ph.D., is a national authority in the field of test preparation. As executive director of Bobrow Test Preparation Services, he has been administering the test preparation programs at over 25 California institutions for the past 27 years. Dr. Bobrow has authored over 30 national best-selling test preparation books, and his books and programs have assisted over two million test-takers. Each year, Dr. Bobrow personally lectures to thousands of students on preparing for graduate, college, and teacher credentialing exams.

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# Preface

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**We know that passing the GED examination is important to you!** And we can help. As a matter of fact, we have spent the last thirty years helping **over a million test takers** successfully prepare for important exams. The techniques and strategies that students and adults have found most effective in our preparation programs at 26 universities, county offices of education, and school districts make this book **your key to success on the GED.**

Our easy-to-use GED Preparation Guide gives you your key to success by covering:

- What to expect
- What you should know
- What to look for
- About The directions
- What you should do

We give you lots of strategies and techniques with plenty of practice problems, plus directions on how to start reviewing.

If you want to do your best on the GED Examination, follow our Study Plan and step-by-step approach to **success on the GED.**

# Study Guide Checklist

---

Check off each step after you complete it.

- ☐ 1. Read the GED information materials available at your local GED center. Check minimum score, age, and residence requirements.
- ☐ 2. Look over the Format of the GED Examination (p. 3).
- ☐ 3. Learn How You Can Do Your Best (p. 4).
- ☐ 4. Read the Answers to Your Questions About the GED (p. 5).
- ☐ 5. Carefully Read Part 2: Working Toward Success and do all the exercises.

Language Arts, Writing (pp. 9–44)

Part I: Multiple-Choice (pp. 9–22)

Part II: Essay (pp. 23–44)

Social Studies (pp. 45–76)

Science (pp. 77–103)

Language Arts, Reading (pp. 105–124)

Mathematics (pp. 125–182)

Visual Materials (pp. 183–213)

- ☐ 6. Carefully Read Part 3: How to Start Reviewing and do all the exercises.

Language Arts, Writing, Part I: Multiple-Choice (pp. 215–228)

Language Arts, Writing, Part II: Essay (pp. 229–242)

Social Studies (pp. 243–252)

Science (pp. 253–262)

Language Arts, Reading (pp. 263–272)

Mathematics (pp. 273–277)

- ☐ 7. Review any basic skills that you need to review.
- ☐ 8. Strictly following time allotments, take Practice Examination 1 (pp. 281–364). **After you take each of the tests** in Practice Examination 1, check your answers on that test and analyze your results using the Answer Key (pp. 365–368), the Scoring Chart (pp. 000), the Score Approximators (pp. 368–371), the Explanations (pp. 372–396) and the Reasons for Mistakes chart (pp. 371).

Language Arts, Writing (pp. 281–300)

Part I: Multiple-Choice

Part II: Essay

Check answers and analyze results

Social Studies (pp. 301–319)

Check answers and analyze results

Science (pp. 320–336)

Check answers and analyze results

Language Arts, Reading (pp. 335–349)

Check answers and analyze results

Mathematics, Part I (pp. 350–375)

Check answers and analyze results

Mathematics Part II (pp. 358–364)

Check answers and analyze results

- ☐ 9. Strictly following time allotments, take Practice Examination 2 (pp. 397–480). **After you have taken all of Practice Examination 2 at one time**, check your answers on the entire examination and analyze your results using the Answer Key (p. 481–483), the Scoring Chart (p. 484), the Score Approximators (pp. 484–488), the Explanations (pp. 488–512), and the Reasons for Mistakes Chart (p. 486–487).
- ☐ 10. Review your weak areas in Part 2: Working Toward Success (pp. 9–214) and Part 3: How to Start Reviewing (pp. 215–280).



**PART I**

# **INTRODUCTION**



# Introduction

## Format of the GED

Language Arts, Writing		
Part I: Multiple Choice	50 Questions	75 Minutes
Part II: Essay	1 Essay	45 Minutes
Social Studies	50 Questions	70 Minutes
Science	50 Questions	80 Minutes
Language Arts, Reading	40 Questions	65 Minutes
Mathematics		
Part I (with calculator)	25 Questions	45 Minutes
Part II (without calculator)	25 Questions	45 Minutes

Because this edition of the test is new, times and numbers of questions may be adjusted slightly in later testings.

# How You Can Do Your Best

---

## A POSITIVE APPROACH

To do your best, use this positive approach:

**First**, look for the questions that you can answer and should get right.

**Next**, skip the ones that give you a lot of trouble. (But take a guess.)

**Remember**, don't get stuck on any one of the questions.

*Here's a closer look at this system:*

1. Answer the easy questions as soon as you see them.
2. When you come to a question that gives you trouble, don't get stuck.
3. Before you go to the next question, see if you can eliminate some of the incorrect choices to that question. Then take a guess from the choices left!
4. If you can't eliminate some choices, take a guess anyway. **Never leave a question unanswered.**
5. Put a check mark on your answer sheet next to the number of a problem for which you did not know the answer and simply guessed.
6. After you answer all of the questions, go back and work on the ones that you checked (the ones that you guessed on the first time through).

Remember, **erase the check marks from your answer sheet before time is called.** If you don't, the marks may be counted by the scoring machine as wrong answers.

**Don't ever leave a question without taking a guess. There is no penalty for guessing.**

## THE ELIMINATION STRATEGY

Sometimes the best way to get the right answer is by eliminating the wrong answers. As you read your answer choices, keep the following in mind:

1. Eliminate poor answer choices right away.
2. On most sections, if you feel you know the right answer, quickly look at the other answers to make sure your selection is best.
3. Try to narrow your choices down to two or three so that you can take a better guess.

**Remember, getting rid of the wrong choices can leave you with the right choice. Look for the right answer choice and eliminate wrong answer choices.**



## Questions Commonly Asked about the GED Exams

---

**Q: Who Administers the GED?**

**A:** The GED is administered by the GED Testing Service of the American Council on Education (ACE).

**Q: When and Where Are the GED Examinations Given?**

**A:** The examinations are given continually throughout the nation. You can get administration dates and locations by contacting your local GED Testing Centers, high schools, or adult schools.

**Q: May I Take the GED Examinations More than Once?**

**A:** Yes. But some states may require you to wait a certain amount of time or to complete a course. Contact your local GED Testing Center for specific information. Remember that your plan is to pass on the first try.

**Q: Are There Any Special Editions of the GED?**

**A:** Yes. In addition to the U.S. version, there is a Canadian version. The GED is also given in Spanish and French. There are also special large-print, Braille, and/or tape-recorded editions for handicapped candidates.

**Q: What Is a Passing Score?**

**A:** Each test is scored from 200 to 800 (standard score) and a percentile rank of 1 to 99 is also given. A standard score of 410 on each individual test and an average score of 450 for the complete test battery is the minimum passing standard set by the GED Testing Service. Each state or jurisdiction may establish its own standards for passing the tests, which are the same as or higher than the national standards. *Be sure to check the current policies in your state.*

**Q: How Many Do I Need to Get Right to Pass?**

**A:** This number varies from state to state. Generally, you must answer 50 to 60% right to pass. Remember, no one is expected to answer all the questions correctly.

**Q: What Grade Level Are the Tests?**

**A:** The tests are standardized to reflect the range of knowledge and ability of 12th-grade students who are certain to graduate. Most current requirements are set so you must score higher than would 40% of today's high school graduates.

**Q: How Should I Prepare?**

**A:** An organized approach is very important. Carefully follow the Study Plan in this book to give you that organized approach. It will show you how to apply techniques and strategies and help focus your review. Also, many states offer preparation programs to help students. Check with your local high school, adult school, occupational center, community college, or GED Testing Center for further information.

**Q: Should I Guess on the Tests?**

**A:** Yes! Since there is no penalty for guessing, guess if you have to. If possible, try to eliminate some of the choices to increase your chances of choosing the right answer.

**Q: How and When Should I Register and Where Can I Get More Information?**

**A:** This information is available from your local GED Testing Center. Call 1-800-62-MYGED (1-800-626-9433) to find your local GED Testing Center. You can also write to General Educational Development, GED Testing Service, American Council on Education, One Dupont Circle, N.W., Suite 250, Washington, D.C. 20036-1163.

## PART II

# WORKING TOWARD SUCCESS

This section emphasizes important test-taking techniques and strategies and how to apply them to different question types.

Read this section very carefully. Underline or circle key techniques. Make notes in the margins to help you understand the strategies and question types.



# Language Arts, Writing — Part I: Multiple Choice

The Language Arts, Writing Test consists of two parts — Part I: the multiple-choice section and Part II: the essay section. The scores from these two sections are combined to give the Writing Test Score. The sections are not reported separately.

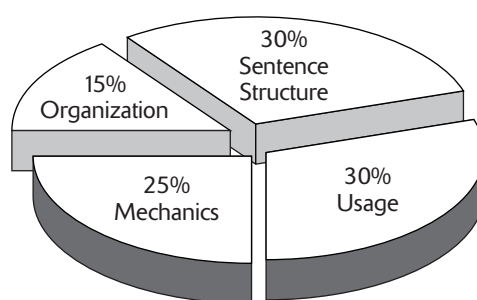
## What to Expect

The Writing Skills Multiple-Choice Section is 1 hour and 15 minutes long and contains 50 questions.

- ⇒ Expect a series of passages with each of the sentences numbered and each of the paragraphs lettered.
- ⇒ Expect some of the sentences to be correct, but *many contain errors* of organization, structure, usage, or mechanics.
- ⇒ Expect to find some obvious errors of spelling, punctuation, capitalization, or grammar.
- ⇒ Expect some errors to be more difficult to spot.
- ⇒ Expect to find errors that are common to student writing (common mistakes).

## What You Should Know

The Language Arts, Writing Test (Multiple-Choice Section) contains the following areas:



The areas tested by the  
Language Arts, Writing Test

### ORGANIZATION (15%)

- Understand the best place in the passage for a sentence.
- Understand where in the passage new paragraphs should begin.
- Be able to spot sentences that don't belong where they are or don't belong at all.

### SENTENCE STRUCTURE (30%)

- Understand how sentences are formed.
- Understand the basic parts of a sentence.
- Be able to spot errors in the construction of a sentence (sentence fragments, run-on sentences, and so on).

### USAGE (30%)

- Understand how to use the parts of speech correctly.
- Understand how parts of a sentence fit together.
- Be able to spot errors in verb tense, agreement, pronoun reference, and so on.

### MECHANICS (25%)

- Understand the rules of punctuation.
- Understand the rules for contractions, possessives, and homonyms.
- Understand the rules of capitalization.

## What to Look For

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### KINDS OF PASSAGES

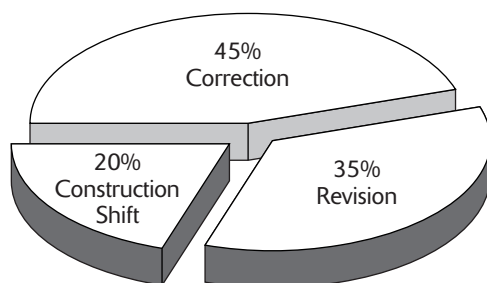
The Language Arts, Writing Test, Part I bases questions on three types of passages, each approximately 200 to 300 words long.

- Documents that are likely to be seen in an adult's workplace or community
- How-to documents that give directions or instructions
- Documents that give information about a particular topic

### KINDS OF QUESTIONS

The Language Arts, Writing Test, Part I will ask you to be able to apply the rules of grammar, usage, and mechanics, and to understand the organization of a piece of writing.

Look for three basic types of questions (item types):



The question types on the Language Arts, Writing Test

- **Correction (45%):** These questions ask you what type of correction should be made to a sentence.
- **Revision (35%):** These questions ask you to select possible corrections for the underlined part of a sentence.
- **Construction Shift (20%):** These questions ask you to select an answer that is a clear, correct rewrite of a sentence or sentences. They may also ask you to move sentences, separate paragraphs, combine paragraphs, or add a new sentence to improve the passage.

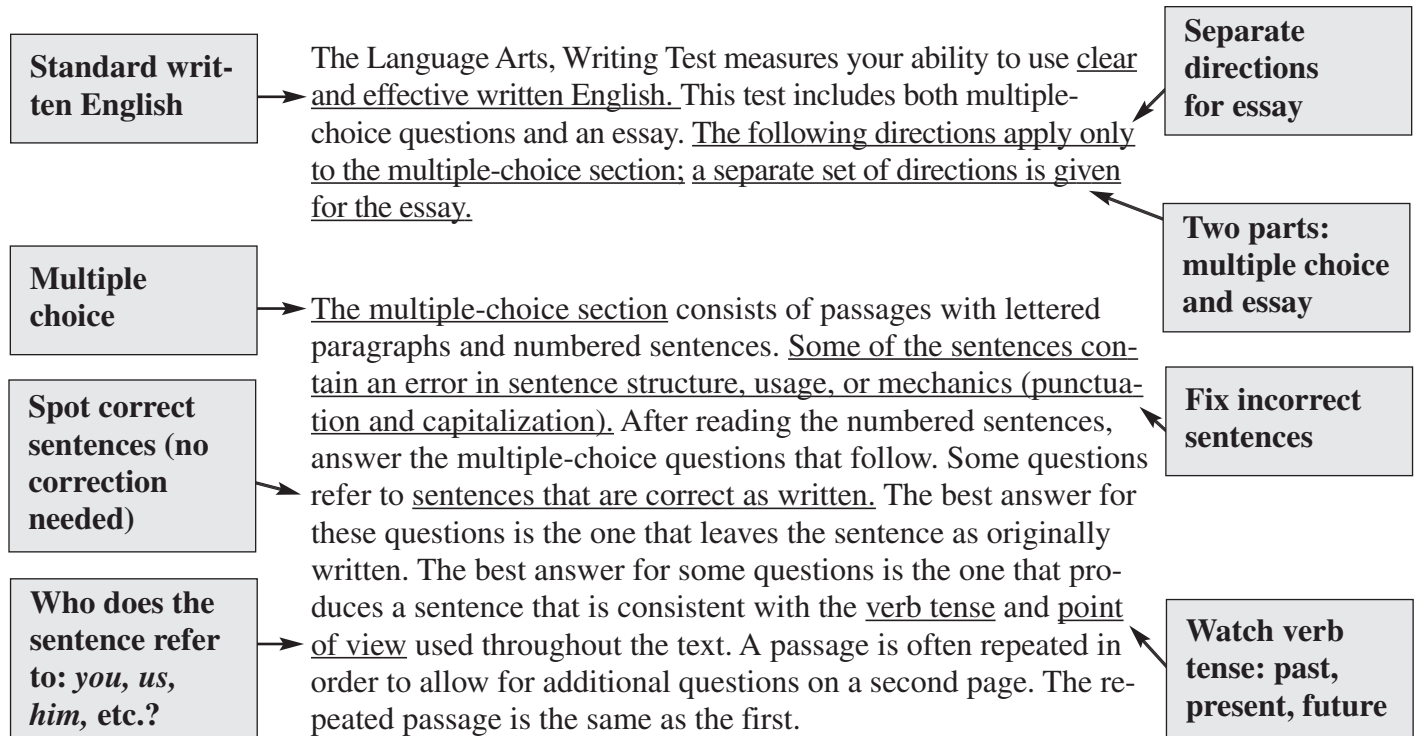
## About the Directions

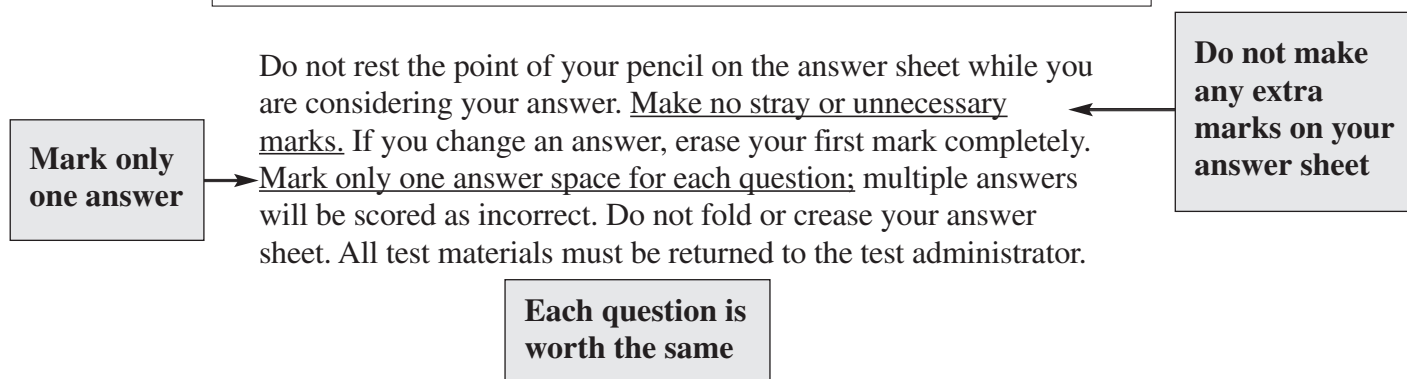
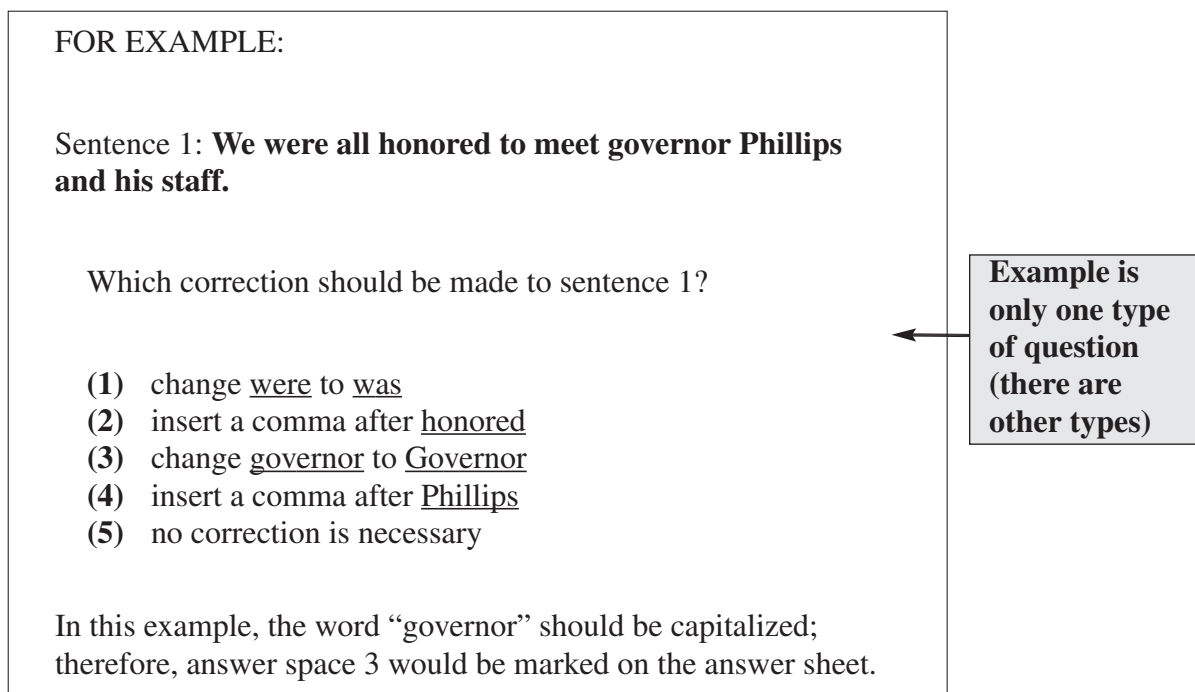
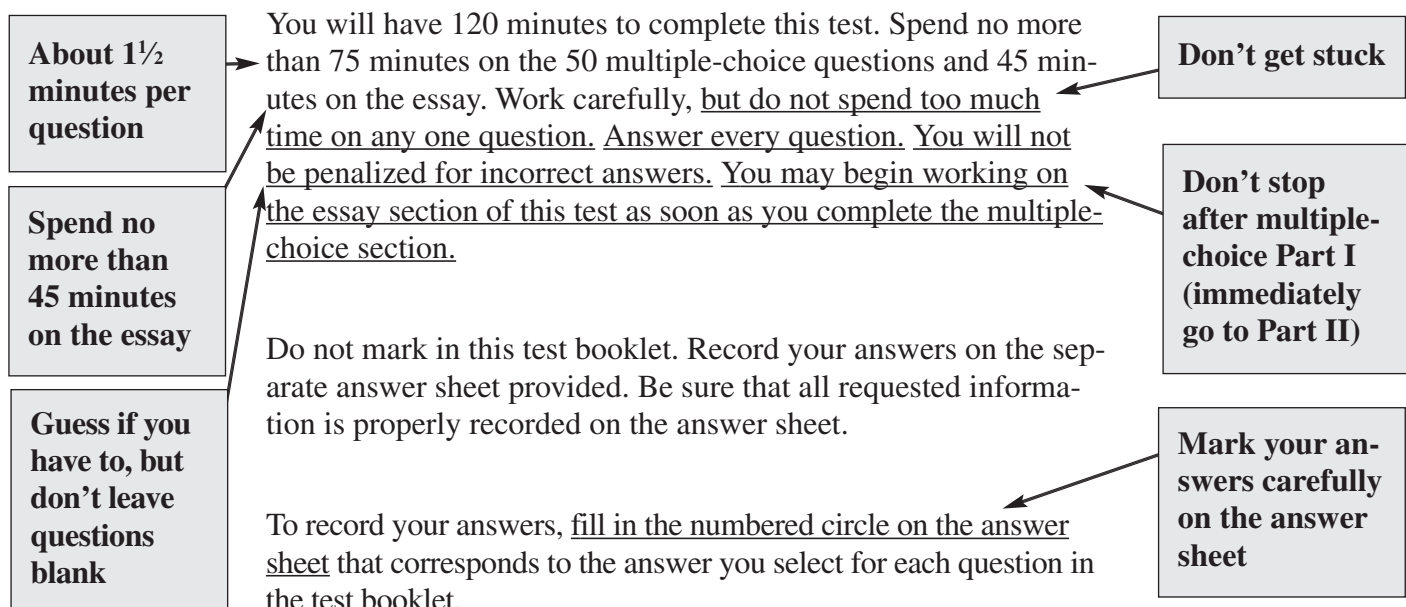
Following are the directions you'll find in the Language Arts, Writing Test, multiple-choice section. Become very familiar with these directions *now* so that you will be comfortable with them when you take the actual test. The directions you'll see on the actual test will be wider on the page. Here, though, room has been left for the boxes you see on the right and the left. Read the following directions straight through first, and then carefully read the information in the boxes. It points out and explains important points in the directions.

### LANGUAGE ARTS, WRITING, PART I

#### Tests of General Educational Development

#### Directions





**DO NOT BEGIN TAKING THIS TEST UNTIL TOLD TO DO SO**



## What You Should Do

**First read through the passage before beginning to answer the multiple-choice questions. Note any obvious errors of spelling, punctuation, capitalization, grammar, or organization.**

**Although there may not be a question on every sentence, you can be sure there will be questions about those sentences in which you have noticed errors.**

The following two sections will use examples to carefully explain the question types, show you what to look for, and point out what you should do.

*Read through the following passage. Watch for errors. The sample questions that follow will be based on this passage.*

*Questions 1 through 8 refer to the following advice on saving.*

### Establishing a Savings Program

#### (A)

(1) In today's uncertain economic environment, it's more important than ever to have a savings program. (2) By accumulating a sum of money, financial security can be established, and you will have a broader range of choices for spending or investing. (3) You're more likely to save if you have a goal in mind. (4) Your goal might be to save for a vacation, taxes, or insurance. (5) You may want to accumulate enough for a down payment on a house. (6) Regardless of your goals, you must always be ready for unexpected financial pressures.

#### (B)

(7) A good savings program includes funds set aside for emergencies. (8) An essential preparation for such emergencies is a contingency fund equal to at least two months' salary. (9) The size, of course, will depend on your family situation and the state of your finances, including debts. (10) You may have resources that can be used in case of an emergency other than your savings. (11) For example, you may have insurance or employee benefits. (12) Or you may have other assets like stocks that one can readily convert to cash. (13) Once you have established a secure emergency fund; you can concentrate on your savings goal.

Here is a closer look at the three kinds of questions that could be asked.

### CORRECTION

About 45% of the questions will ask Which correction should be made to sentence —? Questions will offer a choice of five answers. One of the answers may be no correction is necessary.

- 1. Sentence 1: In todays uncertain economic environment, it's more important than ever to have a savings program.**

Which correction should be made to sentence 1?

- (1) change todays to today's
- (2) remove the comma after environment
- (3) change it's to its
- (4) change savings to saving's
- (5) no correction is necessary

The right answer is (1). The apostrophe showing the possessive has been left out. Watch out for incorrect punctuation.

- 2. Sentence 7: A good savings program include funds set aside for emergencies.**

Which correction should be made to sentence 7?

- (1) change savings to saving
- (2) change savings to saving's
- (3) change include to includes
- (4) change include to included
- (5) change for to in case of

The right answer is (3). The subject of the sentence is the *program*, which is singular. The main verb (*includes*) must also be singular. Watch out for subject/verb agreement errors.

- 3. Sentence 9: The size, of course, will depend on your family situation and the state of your finances, including debts.**

Which correction should be made to sentence 9?

- (1) remove the comma after size
- (2) remove the comma after course
- (3) remove both the comma after size and the comma after course
- (4) insert a comma after situation
- (5) no correction is necessary

The right answer is (5). This sentence is correct as written.

**Keep in mind that some of the sentences will be correct. If the *no correction is necessary* answer is given, don't be afraid to use it if you don't spot a clear error.**

The questions in this form will test your ability to recognize errors in mechanics. They will also test errors of grammar, especially those mistakes that can be corrected by changing only one word. Errors of agreement (for example, a singular subject with a plural verb: *the boy . . . are*) and errors of verb form (for example, a present tense verb used for a past: *yesterday, I go to the store*) are very common in this type of question. Correction questions also deal with organization and may ask about one sentence, several sentences, a paragraph, or the whole passage.

## REVISION

The second kind of question will underline part of one or two sentences. You will be asked about the underlined part.

- 4. Sentence 2: By accumulating a sum of money, financial security can be established, and you will have a broader range of choices for spending or investing.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) of money, financial security can be established
- (2) of money, financial security will be established
- (3) of money, you can establish financial security
- (4) of money, an establishment of financial security
- (5) of money, financial security can be secured

The right answer is (3). The sentence begins with the phrase “By accumulating a sum of money.” This phrase will *dangle* (will not have a word to refer to correctly) unless a person follows. Someone who can accumulate a sum of money must come right after the phrase. Only in answer (3) is there a person (*you*).

- 5. Sentence 3: Your more likely to save if you have a goal in mind.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) Your more likely to save
- (2) Your likely to save more
- (3) You're more likely to save
- (4) You're more than likely to save
- (5) Your more than likely to save more

The right answer is (3). In this much easier question, the contraction for *you are*, *you're*, is necessary to give the sentence a subject and a verb.

**The grammar in answer (4) is correct, but this option *changes the meaning* of the sentence. Watch out for answers that change the meaning of the original sentence.**

- 6. Sentence 12: Or you may have other assets like stock that one can readily convert to cash.**

Which of the following is the best way to write the underlined portion of this sentence?  
If the original is the best way, choose option (1).

- (1) that one can readily convert to cash.
- (2) that one might readily convert to cash.
- (3) that is readily convertible to cash.
- (4) that you can readily convert to cash.
- (5) that you can ready convert to cash.

The right answer is (4). Answers (1) and (2) introduce a third person pronoun (*one*) into a sentence that begins by using the second person (*you*). In answer (3), the singular verb *is* does not agree with the plural subject *assets*. In answer (5), the adjective *ready* is used where the adverb *readily* is needed.

Watch out for pronouns that don't match, such as *you* and *one*.

## CONSTRUCTION SHIFT

The third kind of question will ask you to revise one or two sentences in the paragraph.

- 7. Sentences 4 and 5: Your goal might be to save for a vacation, taxes, or insurance. You may want to accumulate enough for a down payment on a house.**

The most effective combination of sentences 4 and 5 would include which of the following groups of words?

- (1) saving, either for a vacation or taxes
- (2) vacation, taxes, or insurance savings or other bills
- (3) to save for vacation, taxes, insurance, or a down payment
- (4) to accumulate and to save for
- (5) accumulation goal might be to save

The right answer is (3). The revised sentence would read as follows: "Your goal might be to save for a vacation, taxes, insurance, or a down payment on a house." This sentence is direct and clear and doesn't repeat information.

In options (4) and (5) both *accumulate* (or *accumulation*) and *save* are used, which is wordy because they mean close to the same thing.

**8. Sentence 10: You may have resources that can be used in case of an emergency other than your savings.**

The most effective revision of sentence 10 would begin with which of the following groups of words?

- (1) Resources that can be used, resources other
- (2) In emergencies other than your savings can
- (3) Using other emergency resources
- (4) You may have resources other than
- (5) You, other than your savings

The right answer is (4). The revised sentence would read as follows: “You may have resources other than your savings that can be used in case of an emergency.”

Notice that the original sentence (or sentences) in construction shift questions is not incorrect. But in this type of question, the revision makes the sentence(s), the paragraph, or the document as a whole better.

**In a set of eight questions, only one or two will be like these last examples. Two or three questions will be about an underlined part. Most of the questions will ask *which correction should be made*.**

*Here’s another passage and set of questions.*

Questions 1 through 10 refer to the following letter to clients from a financial advisor.

To: Clients of Action Financial Services  
 From: Joseph Danelli, Certified Financial Planner  
 Regarding: Review of suggestions for setting up your budget

(A)

(1) Before you can make up a budget for the year so you can use your money where they’re needed most, you have to know just what your yearly income and expenses are going to be. (2) You probably already know some regular expenses, like your rent or monthly car payments, but to complete the list, you’ll have to check your records. (3) Like your checkbook, checking account statements, charge card statements, and receipts, such as supermarket register tapes. (4) If you can gather together all of these for six- or a twelve-month period. (5) You should also determine how much money you spend each year in cash. (6) To do this, you add up the checks you wrote for cash and your withdrawals of cash from automatic teller machines. (7) Don’t forget to include all of the expenses, like insurance, that come up only once a year, but include neither contributions or gifts to friends.

(B)

(8) You also needed to know your annual net income, that is, what's left after mandatory deductions like social security and income taxes. (9) In this way, as explained, you can achieve an accurate listing of annual expenditures. (10) Paycheck deductions, that you control, like gifts to charity or payroll savings plans, should not be deducted. (11) You may want to adjust these expenditures when you plan your new budget. (12) If your salary changes from paycheck to paycheck because you work irregularly or work on a commission, one must be sure to estimate your annual income carefully.

Sincerely

*Joseph Danelli*

Joseph Danelli, CFA

- 1. Sentence 1: Before you can make up a budget for the year so you can use your money where they're needed most, you have to know just what your yearly income and expenses are going to be.**

Which of the following is the best way to write the underlined portion of this sentence?  
If the original is the best way, choose option (1).

- (1) money where they're needed most
- (2) money where they're most needed
- (3) money where its needed most
- (4) money where it's needed most
- (5) money, where its needed most

The right answer is (4). The error in the sentence is the use of a singular noun (*money*) and a plural pronoun (*they're*). The singular *it's* corrects the error. Since *it's* here is short for *it is*, the apostrophe is necessary.

- 2. Sentence 2: You probably already know some regular expenses, like your rent or monthly car payments, but to complete the list, you'll have to check your records.**

Which correction should be made to sentence 2?

- (1) replace probably with probable
- (2) remove the comma after expenses
- (3) change like to as
- (4) remove the comma after payments
- (5) no correction is necessary

The right answer is (5). The sentence is correct as written.

- 3. Sentence 3: Like your checkbook, checking account statements, charge card statements, and receipts, such as supermarket register tapes.**

Which correction should be made to sentence 3?

- (1) change Like to As
- (2) replace Like with These include
- (3) remove the comma after charge card statements
- (4) change such as to and
- (5) change supermarket to supermarket's

The right answer is (2). As it now stands, the sentence is a fragment; it has no subject and no verb. Only choice (2) gives the needed subject and verb.

- 4. Sentence 4: If you can gather together all of these for a six- or a twelve-month period.**

Which correction should be made to sentence 4?

- (1) insert a comma after can
- (2) change month to monthly
- (3) change twelve-month to one-year
- (4) change the period at the end of the sentence to a question mark
- (5) no correction is necessary

The right answer is (1). Without a comma after *can*, the sentence seems to have no main verb. The verb *gather* in this case means *you should gather*. *Gather* must be set off from *can*. The sentence means *if you are able to do so, you should gather*.

- 5. Sentences 5 and 6: You should also determine how much money you spend each year in cash. To do this, you add up the checks you wrote for cash and your withdrawals of cash from automatic teller machines.**

The most effective combination of sentences 5 and 6 would include which of the following groups of words?

- (1) in cash; to do this
- (2) in cash, to do this
- (3) in cash by adding
- (4) in cash, doing so by adding
- (5) in cash, you add

The right answer is (3). The grammar in choices (1), (3), and (4) is correct, but choice (3) is the *most concise* (shortest). Choices (2) and (5) use commas where they should not be used.

- 6. Sentence 7: Don't forget to include all of the expenses, like insurance, that come up only once a year, but include neither contributions or gifts to friends.**

Which of the following is the best way to write the underlined portion of the sentence? If the original is the best way, choose option (1).

- (1) neither contributions or gifts to friends.
- (2) neither contributions, or gifts to friends.
- (3) neither contributions nor gifts to friends.
- (4) either contributions nor gifts to friends.
- (5) either contribution's or gifts to friend's.

The right answer is (3). *Neither* and *nor* go together. *Neither* and *or* do not go together. *Either* and *nor* do not go together.

Option (5) incorrectly has apostrophes (possessive) in *contribution's* and *friend's* when they should be plurals.

- 7. Sentence 9: In this way, as explained, you can achieve an accurate listing of annual expenditures.**

Which revision should be made to the placement of sentence 9?

- (1) move sentence 9 to the beginning of paragraph A
- (2) move sentence 9 to follow sentence 2
- (3) move sentence 9 to follow sentence 4
- (4) move sentence 9 to the end of paragraph A
- (5) no revision is necessary

The right answer is (4). Paragraph A is entirely about determining your yearly expenses. Paragraph B is about determining your yearly income. So a sentence about *annual expenditures* logically belongs in paragraph A. Sentence 9 is best placed at the end of that paragraph because it sums up the entire paragraph—that is, by doing all the things mentioned in paragraph A (*as explained*), you can arrive at the *accurate listing*.



- 8. Sentence 10: Paycheck deductions, that you control, like gifts to charity or payroll savings plans, should not be deducted.**

Which correction should be made to sentence 10?

- (1) remove the comma after deductions
- (2) remove the commas after deductions and control
- (3) remove the comma after control
- (4) change charity to Charity
- (5) change be deducted to deduct

The right answer is (1). The comma after *deductions* should be removed. The phrase *that you control* is necessary to define a kind of deduction. This is a clause that is needed to show what kind of deductions, and so it should not be set off by commas. The other commas in the sentence are correct.

- 9. Sentence 11: You may want to adjust these expenditures when you plan your new budget.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) You may want to adjust these
- (2) You may have wanted to adjust these
- (3) You want to adjust these
- (4) Your wanting to adjust these
- (5) You will have wanted

The right answer is (1). The sentence is correct as written.

**10. Sentence 12: If your salary changes from paycheck to paycheck because you work irregularly or work on a commission, one must be sure to estimate your annual income carefully.**

Which correction should be made to sentence 12?

- (1) change your to you're
- (2) replace changes with changed
- (3) remove the comma after commission
- (4) change one to you
- (5) no correction is necessary

The right answer is (4). The two paragraphs have used the second person pronoun (*you*). There is no reason to change to the third person (*one*).

Keep in mind that this section of the test is examining your skill in clear and effective written English. The most clear and effective writing is likely to be the most concise. Given a choice between two *correct* versions of the same sentence, choose the *shorter* one.

# Language Arts, Writing — Part II: Essay

## What to Expect

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In Part II of the Writing Test, you are asked to write a brief essay. You will have 45 minutes to plan, write, and proofread the essay.

- ⇒ Expect an essay topic that will ask you to either discuss a personal goal, give an opinion, state a point of view, or explain something.
- ⇒ Expect a topic about an issue or situation of general interest. The topic should be familiar to most adults and high school seniors.
- ⇒ Expect scratch paper to be provided for you to use in planning your essay. (Your notes on scratch paper won't be seen by the scorers.)

## What You Should Know

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You should know that your essay will be scored on how well your essay shows

- An understanding of the topic
- Clear and logical organization
- Specific supporting examples and details
- Proper grammar, usage, and spelling
- Proper use of a variety of words

Your essay will be read and scored by two different readers. The scoring scale is 1 to 4, with 1 the lowest and 4 the highest.

The following “GED Official Scoring Guide — Chart Format” will give you a clear indication of how your essay is scored. Remember, the readers are looking for the *overall effectiveness* of your essay.

## GED Official Essay Scoring Guide – Chart Format

	<b>1</b> <i>Inadequate</i>	<b>2</b> <i>Marginal</i>	<b>3</b> <i>Adequate</i>	<b>4</b> <i>Effective</i>
	Reader has difficulty identifying or following the writer's ideas.	Reader occasionally has difficulty understanding or following the writer's ideas.	Reader understands writer's ideas.	Reader understands and easily follows the writer's expression of ideas.
<i>Response to the Prompt</i>	Attempts to address prompt but with little or no success in establishing a focus.	Addresses the prompt, though the focus may shift.	Uses the writing prompt to establish a main idea.	Presents a clearly focused main idea that addresses the prompt.
<i>Organization</i>	Fails to organize ideas.	Shows some evidence of an organizational plan.	Uses an identifiable organization plan.	Establishes a clear and logical organization.
<i>Development and Details</i>	Demonstrates little or no development; usually lacks details or examples or presents irrelevant information.	Has some development but lacks specific details; may be limited to a listing, repetitions, or generalizations.	Has focused but occasionally uneven development; incorporates some specific detail.	Achieves coherent development with specific and relevant details and examples.
<i>Conventions of Edited American English (EAE)</i>	Exhibits minimal or no control of sentence structure and the conventions of Edited American English (EAE).	Demonstrates inconsistent control of sentence structure and the conventions of Edited American English (EAE).	Generally controls sentence structure and the conventions of Edited American English (EAE).	Consistently controls sentence structure and the conventions of Edited American English (EAE).
<i>Word Choice</i>	Exhibits weak and/or inappropriate words.	Exhibits a narrow range of word choice, often including inappropriate selections.	Exhibits appropriate word choice.	Exhibits varied and precise word choice.

**No score will be given to papers that are written on the wrong topic, are illegible (impossible to read), or are blank.**

*Here is a closer look at what makes an essay effective. Focus on the underlined parts of the sentences.*

An effective essay:

- Presents a clearly focused main idea that addresses the prompt.
- Establishes a clear and logical organization.
- Achieves coherent development with specific and relevant details and examples.
- Consistently controls sentence structure and the conventions of Edited American English (EAE).
- Exhibits varied and precise word choice.

**In addition, for a an essay to be effective, the reader must understand and easily follow the writer’s expression of ideas.**

## What to Look For: Kinds of Topics

**The essay section will ask you to produce your *own* ideas, rather than to understand or analyze others’ ideas.**

Look for

- A simple question or a short descriptive statement followed by a question.
- Information following the question that will direct your essay.
- “What the question is asking you to do.”

A few examples:

### Sample Topic A

Many people believe that television has changed the world. For some these changes have been negative, and for others they have been positive.

In your essay, you may write about the positive effects, the negative effects, or both. Use your personal observations, experience, and knowledge to support your essay.

## Sample Topic B

What is one important change that you would like to make in your life?

In your essay, identify that one change you would make and either explain the reasons for your choice or how you plan to make the change. Use your personal observations, experience, and knowledge to support your essay.

## Sample Topic C

We all have goals in life. What is one of your goals?

In your essay, identify one goal and explain how you plan to achieve it in the next few years. Use your personal observations, experience, and knowledge to support your essay.

## About the Directions

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Following are the directions you'll find in the Writing Test, Essay section. Become very familiar with these directions *now* so that you will be comfortable with them when you take the actual test. The directions you'll see on the actual test will be wider on the page. Here, though, room has been left for the boxes you see on the right and the left. Read the following directions straight through first, and then carefully read the information in the boxes. The boxes point out and explain important points in the directions.

## LANGUAGE ARTS, WRITING, PART II

### Tests of General Educational Development

#### Directions

Look at the box on page 29. In the box are your assigned topic and the letter of that topic.

**Note letter of topic**

You must write on the assigned topic ONLY.

**Mark letter of topic in the right space**

Mark the letter of your assigned topic in the appropriate space on your answer sheet booklet. Be certain that all other requested information is properly recorded in your answer sheet booklet.

**Write or mark other requested information**

**45 minutes to write**

You will have 45 minutes to write on your assigned essay topic.

**Return to multiple-choice section if time remaining**

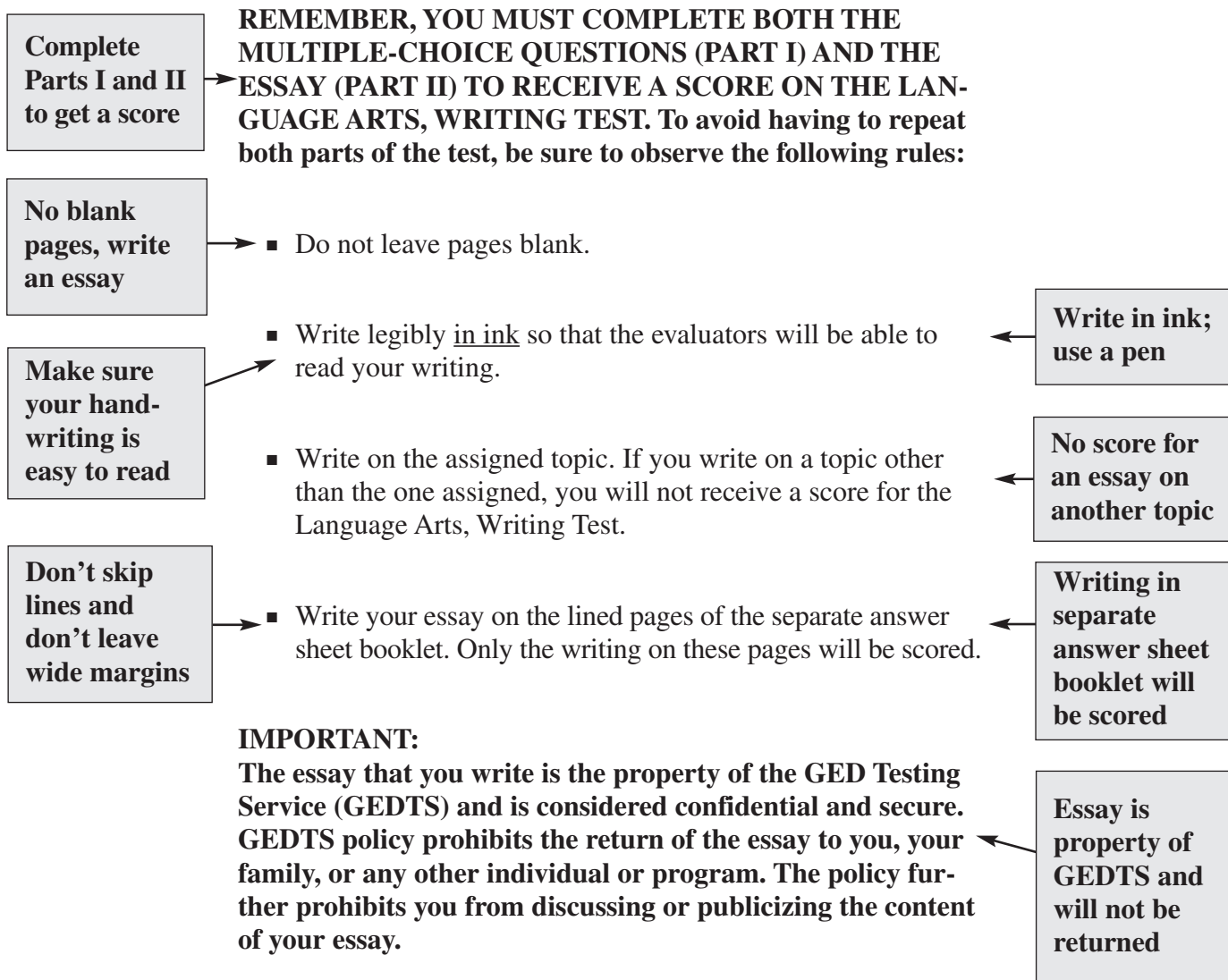
If you have time remaining in this period after you complete your essay, you may return to the multiple-choice section. Do not return the Language Arts, Writing Test booklet until you finish both Parts I and II of the Language Arts, Writing Test.

**Leave time to organize and proofread**

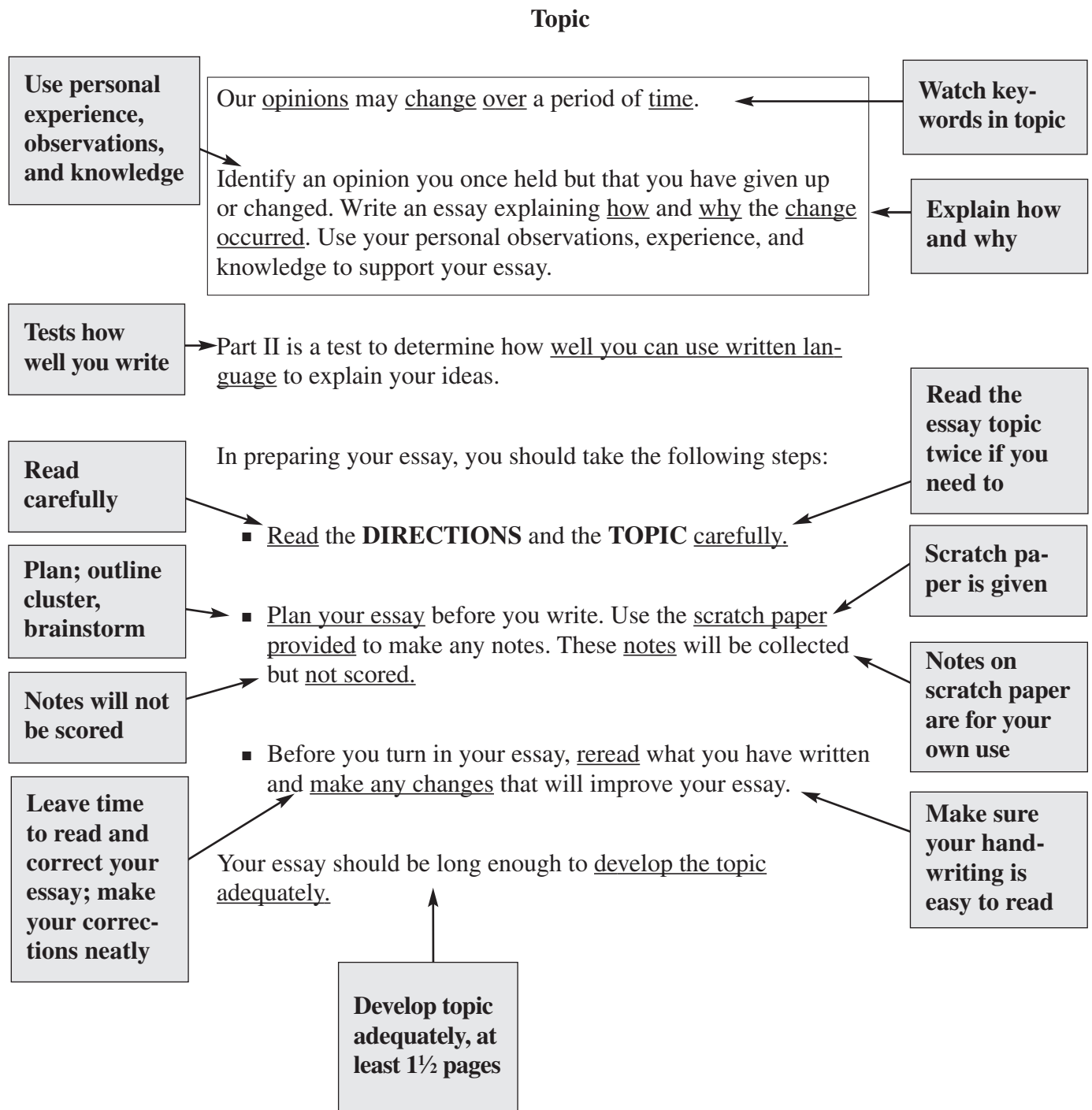
Two evaluators will score your essay according to its overall effectiveness. Their evaluation will be based on the following features:

- well-focused main points;
- clear organization;
- specific development of your ideas;
- control of sentence structure, punctuation, grammar, word choice, and spelling.

**Your essay should be effective, be on the topic, have lots of examples, and use proper grammar, punctuation, spelling and a variety of words.**







## What You Should Do

---

You should follow these basic steps:

- ☐ Read the question carefully.
- ☐ Spend a few minutes planning your answer using the scratch paper provided.
- ☐ Write a clear statement of purpose.
- ☐ As you continue writing, keep your purpose clearly in mind.
- ☐ Write a conclusion, or ending, that points toward the future.
- ☐ Reread your essay, and correct any errors you find.

The following section will use examples to carefully explain the **techniques** in **writing a good essay**.

### SECTION 1: A SAMPLE ESSAY

#### Sample Topic A

Many people believe that television has changed the world. For some, these changes have been negative, and for others they have been positive.

In your essay, you may write about the positive effects, the negative effects, or both. Use your personal observations, experiences, and knowledge to support your essay.

### ANALYSIS AND TECHNIQUES

#### Step 1: Read the Question Carefully

As you read the essay question, *note the key words*. Notice that you must discuss “the effects of television” and that you must “support your essay.” If you do not focus on the effects of television or do not support your essay — provide specific examples — you will not receive a passing score.

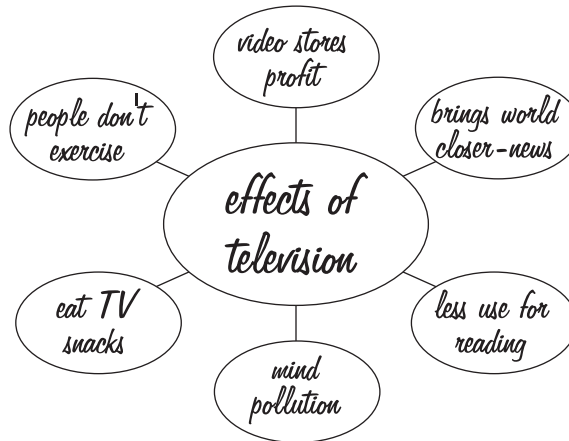
#### Step 2: Spend a Few Minutes Planning Your Answer

With only a few minutes to plan, you should jot down information quickly and in an effective way. One technique for doing this is *clustering*, which is illustrated in the next few pages.

**1. Jot down the topic you have been asked to discuss, “effects of television,” and draw a circle around this phrase.**

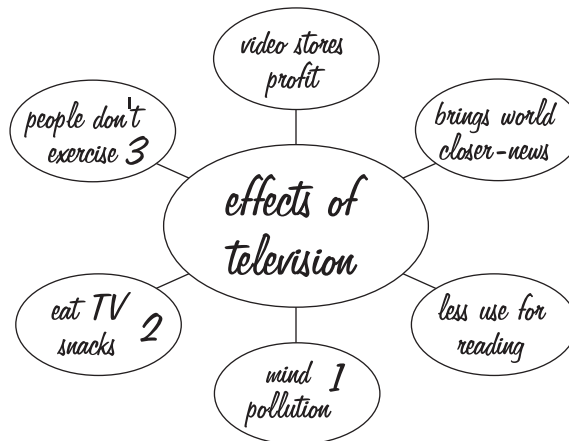


**2. Jot down all of the specific examples of the effects of television as they occur to you, as illustrated below.**



At this point, don't worry about whether your examples are "good" or not; just write down whatever comes to mind.

**3. Number the clusters to show which ones you plan to use and in what order.**



Remember that other ideas will come to you as you write. You might want to include these in your essay.

### Step 3: Write a Clear Statement of Purpose

Your readers will be looking for a clear theme or position that is supported throughout the essay. To state your purpose, take the topic (effects of television) and give an opinion about the topic that you can support with your examples. For instance:

*Watching too much television has polluted our minds and weakened our bodies.*

or

*Because of television, we are all reading less, but we are learning much more.*

or

*The positive effects of television far outweigh the negative ones.*

or

*The negative effects of television far outweigh the positive ones.*

or

*There are both "positives" and "negatives" about watching television.*

After writing your statement of purpose, add a sentence or two introducing the examples you intend to discuss:

*Watching too much television has polluted our minds and weakened our bodies. Most TV shows are written at a low level. They are meant to appeal to a low mentality. People who become addicted to these low level shows spend less time in healthy, outdoor activities. They get out of shape and learn very little.*

Watching too much television has polluted our minds and weakened our bodies. Most TV shows are written at a low level. They are meant to appeal to a low mentality. People who become addicted to these low level shows spend less time in healthy, outdoor activities. They get **out of shape** and **learn very little**.

**Examples  
of negative  
effects**

Notice that the opening paragraph focuses on two of the *negative effects* of television. The question allows you to focus on “the positive effects, the negative effects, or both.” Because you start with a purpose statement that promises to discuss *both positive and negative effects*, you might instead compose an opening paragraph as follows:

*The positive effects of television far outweigh the negative ones. Although some people may be reading and exercising less because they watch TV too much, many are learning more about the world than ever before.*

The positive effects of television far outweigh the negative ones. Although some people may be **reading and exercising less** because they watch TV too much, many are **learning more about the world** than ever before.

Negative effects

Positive effect

Because you are given a choice, either of these openings would be appropriate for the topic.

#### **Step 4: As You Continue Writing, Keep Your Purpose Clearly in Mind**

*Writing the body of the essay* means giving specific details that tell more about the examples you have introduced. Make sure that your details are specific and that they support your purpose. For instance, if your purpose is to show that “watching too much television has polluted our minds and weakened our bodies,” every detail should be a *particular instance* of how television pollutes minds and weakens bodies. The following example repeats one of the opening paragraphs given above and adds a paragraph of specifics.

Watching too much television has polluted our minds and weakened our bodies. Most TV shows are written at a low level. They are meant to appeal to a low mentality.

People who become addicted to these low level shows spend less time in healthy, outdoor activities. They get out of shape and learn very little.

Consider a family on a typical Thursday night in a typical American home. They begin by watching the evening news, which contains only short, simple overviews of complicated news stories. Then thinking that they are "informed on issues of the day," the family switches to game shows and pretends to be smart by watching other smart people answer questions on Wheel of Fortune and Jeopardy. Then, along with millions of others, this family sits and laughs at the same old jokes and the same old plots and the same old characters on The Simpsons, Friends, Malcolm in the Middle, E.R., and The Practice. Then one more half-hour of "happy talk" news, weather, sports, and these TV addicts go off to sleep with laugh tracks and commercial jingles in their heads. Of course, they have been munching TV snacks all this time, rather than enjoying the fresh night air, and maybe exercising.

Watching too much television has polluted our minds and weakened our bodies. Most TV shows are written at a low level. They are meant to appeal to a low mentality. People who become addicted to these low level shows spend less time in healthy, outdoor activities. They get out of shape and learn very little.

Consider a family on a typical Thursday night in a typical American home. They begin by watching the **evening news**, which contains only **short, simple overviews** of complicated news stories. Then, thinking that they are “informed on issues of the day,” the family switches to **game shows** and pretends to be smart by watching **other smart people answer questions** on **Wheel of Fortune** and **Jeopardy**. Then, along with millions of others, this family sits and laughs at the same old jokes and the **same old plots and the same old characters** on **The Simpsons**, **Friends**, **Malcolm in the Middle**, **E.R.**, and **The Practice**. Then one more half-hour of “**happy talk**” news, weather, sports, and these TV addicts go off to sleep with laugh tracks and commercial jingles in their heads. Of course, they have been **munching TV snacks** all this time, **rather than enjoying the fresh night air, and maybe exercising**.

Specific  
examples of  
weakening  
bodies

Specific  
examples of  
polluting  
minds

So far, this composition is not perfect, but it is strong in its specific examples and its control of purpose.

### Step 5: Write a Conclusion that Points Toward the Future

Rather than writing a conclusion that just repeats what you have already said, you should use what you have said to either tie things together or make a final, new point. To do this, take the information you have discussed and tell how it will probably affect the future. For instance:

*If people keep spending more time watching television and less time reading and playing, we will be sorry that TV was ever invented because it will make us a world of out-of-shape illiterates.*

Effect on  
the future

If people keep spending more time watching television and less time reading and playing, we will be **sorry that TV was ever invented** because it **will make us a world of out-of-shape illiterates**.



**Step 6: Reread Your Essay and Correct Any Errors You Find**

Always allow a few minutes to proofread your essay for errors in grammar, usage, and spelling. To make sure that you proofread carefully, try this: With your scratch paper, cover all but the first line of your essay. Read that line carefully. Then uncover and read the second line, and so forth. If you find an error, line it out carefully and write your correction neatly. Keep in mind that your handwriting must be *legible* (easy to read).

**A Reminder About Scoring**

Your GED essay will be scored by two readers, on a four-point scale. Scores of 1 and 2 are on the lower half of the scale, and scores of 3 and 4 are on the upper half of the scale.

Upper-half essays demonstrate a clear purpose, a clear and effective structure, specific and relevant details, and correct use of language.

Lower-half essays demonstrate an unclear purpose, lack of organization, lack of specific details, and incorrect use of language.

The essay above on watching too much television represents an upper-half essay; the essay on the next page, written on the same topic, represents a lower-half essay.

A lower-half essay is on the next page.

*The effects of television are both good and bad. I will be writing about some of these effects.*

*Television has alot of good effects. We can get the news faster than the newspaper, and with more pictures that tell us what is happening. We can relax and laugh when shows are funny. We can also watch TV as a family, doing this with each other for more togetherness.*

*The bad effects of television are that it is always something to do instead of studying, and that it always does not tell us everything. For instance, when the space shuttle blew up, the explotion was on TV over and over, but we didn't really find out why it happened until months later, when it was written in the newspaper and magazines are more informitive than just sitting in front of the TV.*

*As I have shown, there are good and bads on television. Especially commersahls, which tries to focus us to buy everything in site. But if we didn't have the commershal, then the economy would not have a good way to tell us what is avaleble, and we would shop without knowing what to look for.*

*In conclusion, knowing the goods and the bad effects of television has caused some people to have a better life, but for others it has given us nothing but trouble.*

The effects of television are both good and bad. **I will be writing about some of these effects.**

Television has **alot** of good effects. We can **get the news faster** than the newspaper, and **with more pictures** that tell us what is happening. We can **relax and laugh** when shows are funny. We can also watch TV as a family, doing this with each other for more **togetherness**.

The bad effects of television are that it is always **something to do instead of studying**, and that it always **does not tell us everything**. For instance, when the space shuttle blew up, the **explotion** was on TV over and over, but we didn't really find out why it happened until months later, when it was written in the newspaper and magazines **are more informitive** than just sitting in front of the TV.

As I have shown, there are good and bads on television. Especially **commershals**, which tries to focus us to buy everything in **site**. But if we didn't have the **commershal**, then **the economy would not have a good way to tell us what is avaleble**, and we would shop without knowing what to look for.

In conclusion, knowing the goods and the bad effects of television has caused some people to have a better life, but for others it has given us nothing but trouble.

**Unclear statement of purpose**

**Grammar errors**

**General statements, not specific examples**

**Spelling errors**

**Good effects paragraph followed by bad effects paragraph; organization OK**

**Poor organization within paragraphs; no plan; sentences are not tied together**

**Spelling errors**

**Information not connected to main point**

Notice that the boxes above point out *some* of the problems in this essay but *not all* of them. See if you can find other problems with spelling, punctuation, usage, and organization.

## SECTION II: TWO MORE SAMPLE ESSAYS

Here's a look at two more sample essays.

### Sample Topic B

Most experts agree that proper nutrition and a healthy diet are essential for a healthy body. Yet, fast-food restaurants are more popular than ever.

In your essay, consider the question, "With all of the attention today on physical fitness, why are fast-food restaurants doing so well?" Use your personal observations, experience, and knowledge to support your essay.

Now review the essay that follows to see if you can spot the strong points.

**A Topic B Essay**

*It's hard to explain why humans behave in certain ways.*

*Although people want to be fit, still they eat fast foods which may not be good for them. There seems to be two basic reasons — time and convenience.*

*People today rush to do everything. They rush to work or play by driving quickly. For example, although the speed limit may be 55 mph, many cars go 60 or even faster. Computers rush us through our work. Almost every business now has one.*

*Kitchens have time-saving devices, like veg-o-matics and microwave ovens which can bake a potato in a minute. What this boils down to is time. Many of us simply don't have enough time. So fast-food restaurants save us time "wasted" on eating.*

*Convenience is another reason fast food is so popular. You don't have to get out of your car to buy it or eat it. You don't have to cook it. All you have to do is unwrap it. It's just plain easy.*

*But there's a problem. Studies show that a healthy diet is essential for a healthy body and a long life. So the time taken for a good meal is certainly not wasted. Yet, fast-food restaurants continue to be popular. This behavior seems strange. We eat fast foods to save us time so that we can get to the gym and get in shape. Our placing a high value on time and convenience has in some ways overshadowed the value of having a healthy body.*

### A Second Look at the Complete Essay

It's hard to explain why humans behave in certain ways. Although people want to be fit, still they eat fast foods which may not be good for them. There seems to be two basic reasons — time and convenience.

Good, brief introductory paragraph setting up the topic

First reason: time

People today **rush** to do everything. They rush to work or play by **driving quickly**. For example, although the speed limit may be 55 mph, many cars go **60** or even faster. **Computers** rush us through our work. Almost every business now has one. Kitchens have time-saving devices, like **veg-o-matics** and **microwave ovens** which can bake a potato in a minute. What **this boils down to** is time. Many of us simply don't have enough time. So fast-food restaurants save us time "wasted" on eating.

Avoid using clichés

Well-developed paragraph with lots of specific examples

Second reason: convenience

**Convenience** is another reason fast food is so popular. You **don't have to get out of your car** to buy it or eat it. You **don't have to cook** it. All you have to do is **unwrap** it. It's just plain easy.

Good specific examples

**Excellent  
closing  
paragraph**

But there's a problem. Studies show that a healthy diet is essential for a healthy body and a long life. So the time taken for a good meal is certainly not wasted. Yet, fast-food restaurants continue to be popular. This behavior seems strange. We eat fast foods to save us time so that we can get to the gym and get in shape. Our placing a high value on time and convenience has in some ways overshadowed the value of having a healthy body.

A cluster for the essay shown above might look like this:



### Another Topic B Essay

Here's another sample essay on the same topic.

### Sample Topic B

Most experts agree that proper nutrition and healthy diet are essential for a healthy body. Yet, fast-food restaurants are more popular than ever.

In your essay, consider the question, "With all of the attention today on physical fitness, why are fast-food restaurants doing so well?" Use your personal observations, experience, and knowledge to support your essay.

Now review the essay that follows to see if you can spot the strong points.

*Who said fast food isn't good for you? It may not have been years ago, but now it's better than most food we eat at home.*

*Fast-food restaurants let people get their food quickly. And now they provide something new—nutritious food. Now all of the fast-food restaurants have begun to offer healthier types of food. Places that once served only hamburgers now serve fish and chicken as well. Places that once provided only a choice of meat and fish now also serve salads. You can order many different types of salads too—pasta salad, chef's salad, chicken salad, etc. Many fast-food restaurants also offer low-calorie diet food, such as a salad bar with cottage cheese, Jell-O, and many kinds of fresh fruit. So now even the calorie counter can enjoy going to a fast-food restaurant.*

*Fast-food restaurants remain popular because they have changed with the times. They offer a wide selection of foods for the health nut as well as for the normal person.*

#### A Second Look at the Complete Essay

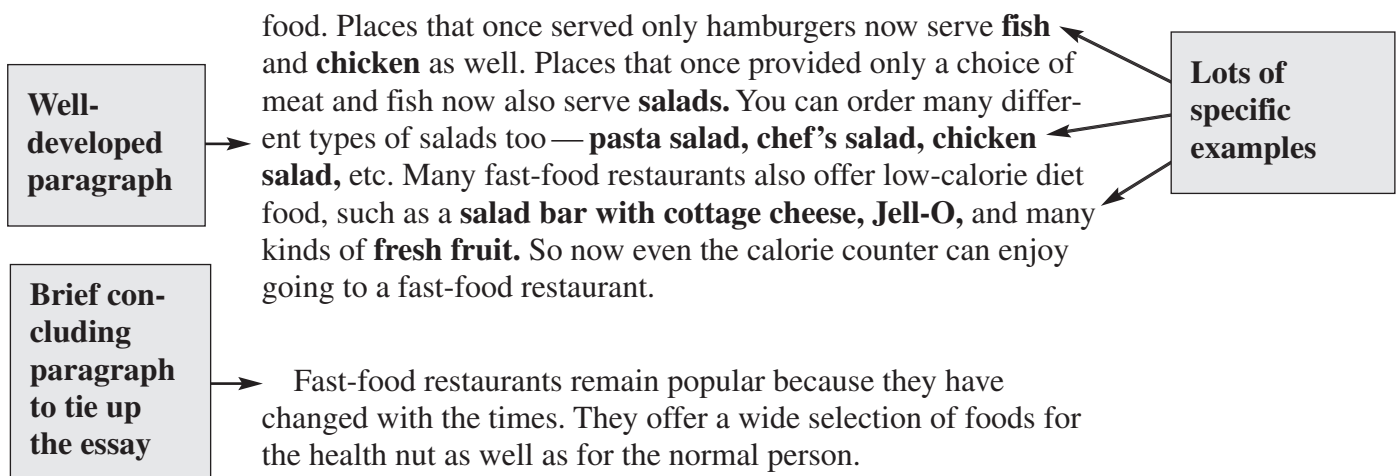
Good  
opening  
paragraph

Who said fast food isn't good for you? It may not have been years ago, but now it's better than most food we eat at home.

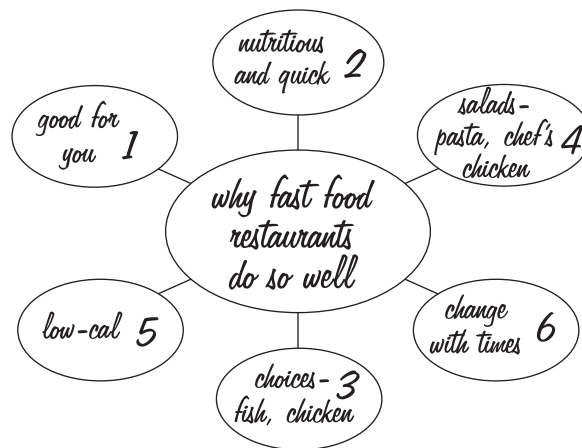
Opening  
question to  
"grab" the  
reader's  
attention

Fast-food restaurants let people get their food quickly. And now they provide something new — **nutritious food**. Now all of the fast-food restaurants have begun to offer healthier types of





A cluster for the essay shown above might look like this:



## JUDGING YOUR OWN ESSAY

In the *How to Start Reviewing* section of this book, you'll have a chance to try some of your own practice GED essays. After each practice essay, you'll find a checklist to help you judge how well you've done on your essay. These are the questions you should ask yourself after you've completed each essay.

Did you:

1. Focus on the assigned topic?
2. Answer the question?
3. Give a statement of purpose?
4. Make your thoughts flow in an organized manner?
5. Support your view with specific examples?
6. Use correct English?
7. Use a varied and precise choice of words?
8. Present the essay well (make it neat, easy to read)?



# Social Studies

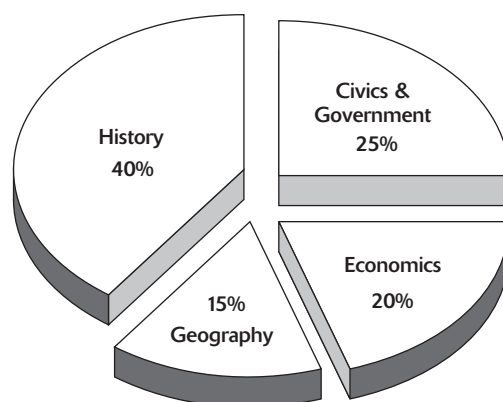
## What to Expect

The Social Studies Test is 1 hour and 10 minutes long and contains 50 multiple-choice questions.

- ⇒ Expect questions that ask you to read and reason carefully using social studies materials. You are not expected to memorize specific dates or events in politics or history.
- ⇒ Expect questions that test how well you understand concepts, ideas, and problems associated with social studies.
- ⇒ Expect questions that relate to everyday life — experiences of citizens, consumers, and workers in the United States and the rest of the world.
- ⇒ Expect questions that test a high school–level understanding of the social sciences. The United States edition of the Social Studies Test emphasizes questions with a specific U.S. focus.
- ⇒ Expect about 40 percent of the questions to ask you to draw conclusions from information in passages related to the social sciences — especially history, economics, and civics and government.
- ⇒ Expect about 60 percent of the questions to ask you to draw conclusions from maps, charts, graphs, tables, advertisements, political cartoons, and photographs, or from a combination of written and visual information.
- ⇒ Expect about two-thirds of the questions to be in groups, or sets — that is, between two and six questions that refer to the same visual or textual information.

## What You Should Know

The Social Studies Test contains the following areas:



The areas tested by the Social Studies Test

You should be able to answer questions from information given in the following areas:

## **HISTORY (40%)**

**(25% United States; 15% World)**

- Information that discusses how history reflects **social, political, and economic developments**
- Articles about how major **events** have shaped **U.S. or world history**
- Information that explains current **U.S. or global social and political problems**
- **Graphs, charts, tables, maps, cartoons, or photographs** that deal with **historical times or concepts**
- **Visual and written information** about the **United States** — from colonization, settlement, and revolution to expansion, Civil War, reconstruction, and industrialization, to the Great Depression, World War II, and contemporary society
- **Visual and written information** about **world history** — from early civilizations to empires and religions, to growing trade and hemispheric interactions, to the World Wars, new democracies, and the Cold War

## **CIVICS AND GOVERNMENT (25%)**

- Information that discusses how **political decisions** have a **worldwide impact**
- **Articles or visual information** that show the importance of the **American political system** and parties, the Constitution, and state and local governments
- Excerpts that explain current **U.S. political problems and foreign policy issues**
- Information that explains the **roles of citizens** in American democracy

## **ECONOMICS (20%)**

- Excerpts that explain how a **free-market system** operates and how the **economy is organized**
- Information that explains how **capitalism** works and how it differs from **other economic systems**
- **Articles, charts, graphs, or maps** that explain **economic indicators** and the **world economy**
- **Documents and information used by most adults** in their roles as citizens, consumers, and workers

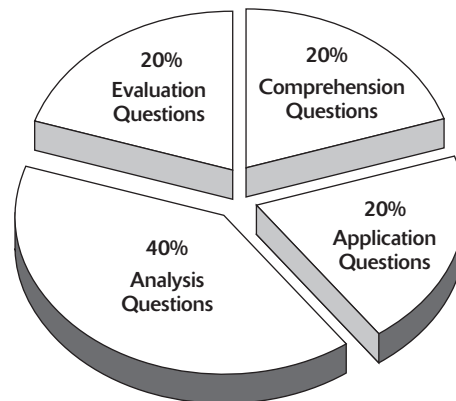
## **GEOGRAPHY (15%)**

- Information that discusses how **humans** have had a major **impact** on the **natural environment**
- **Maps, charts, graphs, or articles** that show the major **geographic regions** and the distribution of the **world's population**
- **Excerpts** that discuss the **environment, pollution, and the use of natural resources**

## What to Look For: Kinds of Questions

The GED Social Studies Test will test higher-level thinking skills. The exam will *not* ask you simply to remember facts. For example, you would *not* be expected to know the year that the Monroe Doctrine was signed. However, you *are expected* to understand important social studies principles, concepts, and events.

The questions on the Social Studies Test are grouped as follows.



The question types on the Social Studies Test

**Comprehension Questions (20%):** You should be able to understand the meaning of information presented in articles or excerpts, as well as in maps, charts, and graphs. Comprehension questions can be answered simply from the information presented in the reading. Comprehension questions will ask

- What is the **main point**?
- What is **another** way of stating the main point?
- What is **suggested** by the information?

**Application Questions (20%):** You should be able to reason one step beyond the comprehension level. You must apply information already stated to solve a problem in a different situation (different context). Application questions will ask

- Can you use the **suggested information** in a **new setting**?
- Can you apply general statements to a new situation?

**Analysis Questions (40%):** You should be able to compare information or data. You must be able to explore the relationships of several ideas. Analysis questions will ask

- Can you find **ideas** that are **not specifically stated**?
- Can you tell the **difference** between a **fact** and a **hypothesis**? Can you tell if a hypothesis is **based on** the passage?
- Can you tell what **makes** an event **happen** and what the **results** are?
- Can you **draw a conclusion** from the information?

**Evaluation Questions (20%):** You should be able to judge the accuracy of stated or assumed material. Evaluation questions will ask

- ☐ Can you tell whether the information given would **support** a **point of view**?
- ☐ Can you **detect why** decisions are made?
- ☐ Can you determine a **trend** and predict its **outcome**?
- ☐ Can you find what is **not true** in an argument?

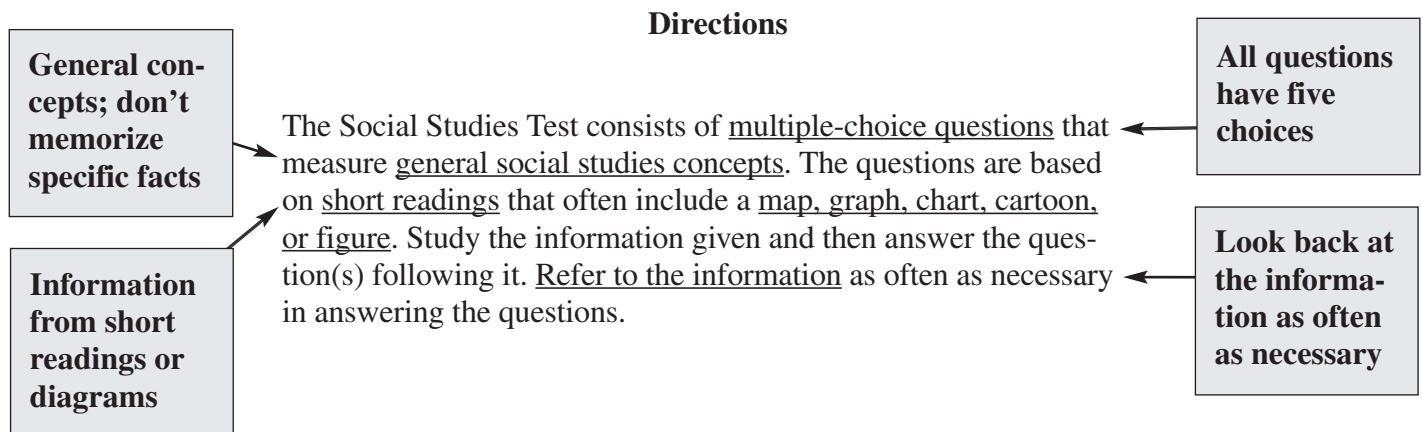
## About the Directions

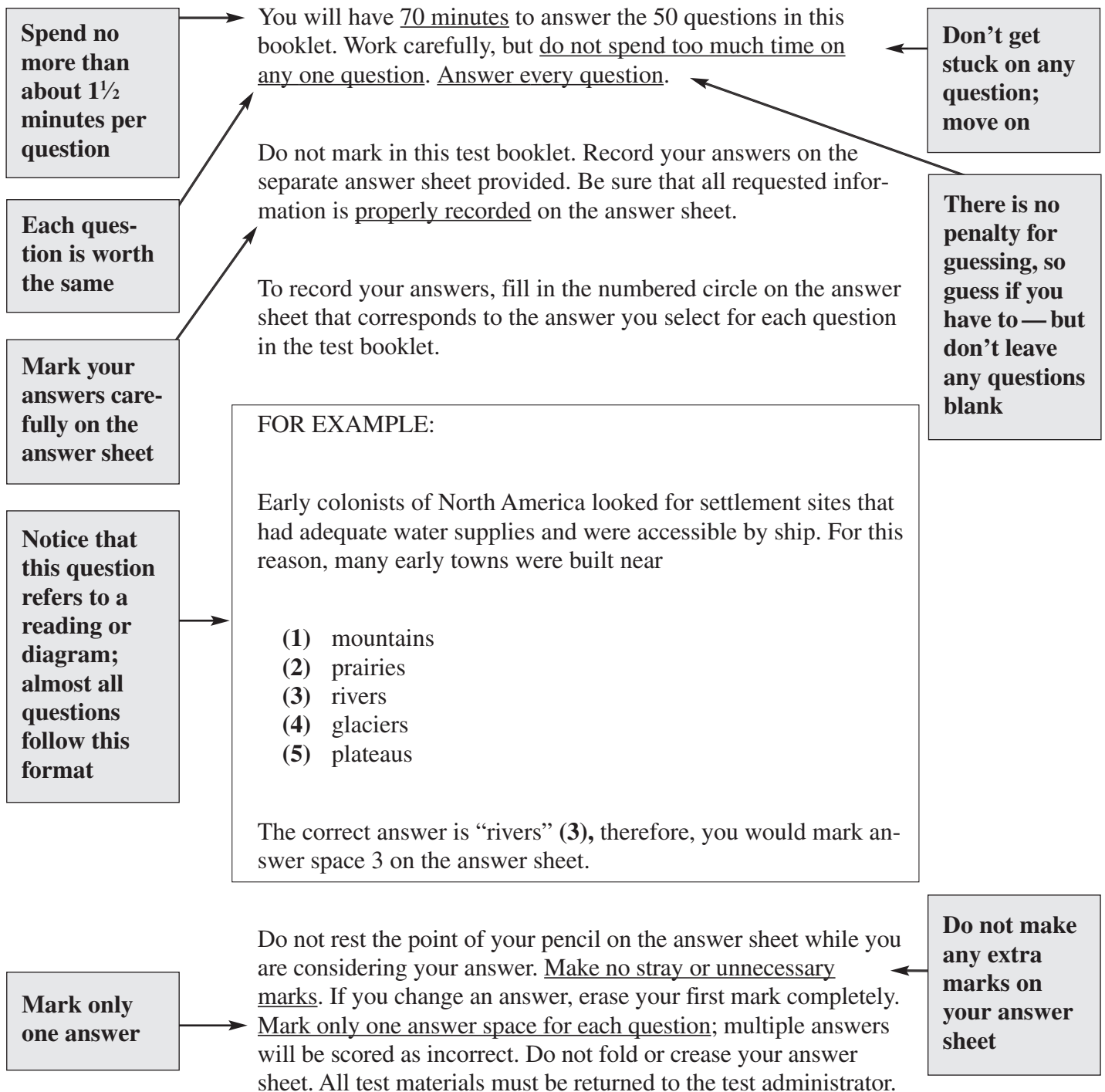
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Following are the directions you'll find in the Social Studies Test. Become very familiar with these directions *now* so that you will be comfortable with them when you take the actual test. The directions you'll see on the actual test will be wider on the page. Here, though, room has been left for the boxes you see on the right and the left. Read the following directions straight through, and then carefully read the information in the boxes. It points out and explains important points in the directions.

### SOCIAL STUDIES

Tests of General Educational Development





## What You Should Do

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Read the information looking for the following key points:

- ☐ What is the main idea?
- ☐ What is the author suggesting?
- ☐ Are there conflicting ideas?
- ☐ Is the historical time period evident?
- ☐ Are causes and results apparent?
- ☐ What are the specific supporting details?

Refer to the information, chart, graph, or map as often as necessary.

**Graphs, charts, maps, political cartoons, and photographs often take a second and third look. Take an extra few moments to make sure you understand how to read the graph, chart, map, cartoon, or photograph. Know what information is being presented.**

Make sure you understand what the question is asking, for example:

- According to the passage, which of the following is . . .
- All of the following are possible explanations EXCEPT . . .
- It can be inferred from the chart that . . .
- The one factor that contributed to . . .
- Which of the following statements is supported by . . .
- The economy of the South was based on . . .
- Which of the following is an example of . . .

The following four sections use examples to explain the **question types**, show you **what to look for**, and point out **what you should do**.

## Section I: Short Readings or Visual Information with Single Questions

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In each of the following, short paragraphs or visual information will be followed by a question. Read each carefully, answer the question, and then study the explanation that follows.

### COMPREHENSION QUESTIONS

*You might be given the following type of paragraph.*

The belief that all people are created equal is part of the American value system. However, laws, regulations, or statutes do not yet protect all people equally. Legal interpretations of

equality are continually being re-evaluated and redefined. Such things as race, religion, or social standing should have no bearing on a person's legal guarantees.

A **civics and government** question similar to this could follow.

**1.** Which of the following best summarizes the paragraph's main point?

- (1) In basic rights, minorities are not equal to the rest of society.
- (2) All people are equal in ability.
- (3) All people should have equal protection under the law, regardless of their position in society.
- (4) Women are not yet equal to men.
- (5) Rights are not protected by laws and statutes.

The right answer is **(3)**. To answer this question, you must understand the *main idea* of the paragraph. The best answer will be broad enough to include the major points. Watch out for answers that are too specific and focus on only part of the reading, such as choices **(1)** or **(4)**; they do not state the main idea.

The main idea is that *all* people should have equal rights **(3)**.

Choice **(2)** has nothing to do with the paragraph. Choices **(1)** and **(4)** are closer to being right because they mention an *example* of inequalities, but they are not right because they are *examples*, not the *main idea*. Good *wrong* answers, like these, will usually be truths, but not answers to the questions on the exam. The main point of the paragraph is not as specific as either **(1)** or **(4)**. Choice **(5)** is wrong because the passage mentions "laws" that "do not all protect people equally," so you do know that *some* rights are protected.

*You may be given the following type of reading.*

In the late nineteenth and early twentieth centuries, the U.S. government followed a policy of laissez-faire (noninterference) which, in effect, allowed business to regulate itself. It was believed that this would not lead to an unfair business advantage, since business would act in the "best interests" of society. In reality, the laissez-faire policy made it possible for businesses to form giant monopolies — undermining the free-market system.

A **history** question similar to this could follow.

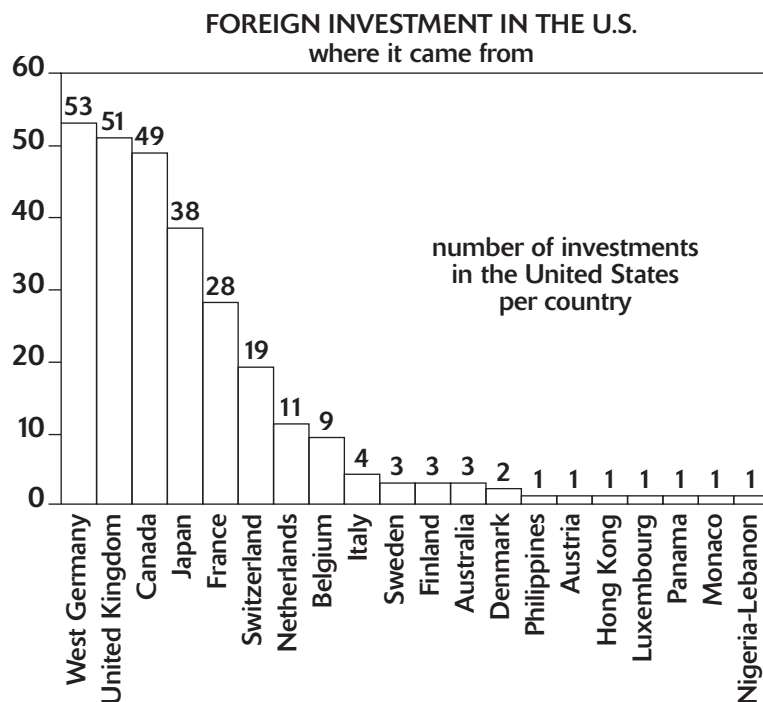
**2.** According to the reading, the policy of laissez-faire allowed business to

- (1) protect the interests of the people
- (2) control prices and eliminate competition
- (3) control the government
- (4) encourage human rights
- (5) elect political leaders

The right answer is (2). To answer this question, you must be able to *restate* an idea in the passage. The last sentence says that the policy of *laissez-faire* allowed businesses to form monopolies.

If you know that *monopolies* hold exclusive control over the market, choice (2) should be clear. Even if you are not certain about the meaning of *monopolies*, however, you know the effect was “undermining the free-market system.” This, too, should point to choice (2). There is nothing in the reading about the “interests of the people” (1), “human rights” (4), or electing “political leaders” (5).

*You might be given a chart similar to the one that follows.*



A **geography/economics** question similar to this could follow.

**3.** The majority of foreign investments in the United States came from which geographic area?

- (1) North America
- (2) Eastern Europe
- (3) Far East
- (4) Western Europe
- (5) Canada

The right answer is (4). To answer this question, you must be able to recognize that most of the countries listed in the chart with the largest investment (West Germany, the United Kingdom, France, Switzerland, Netherlands) are in Western Europe.



The chart at the left shows that eight of the top ten foreign investments in the United States came from Western Europe. This comprehension question requires you to read the chart accurately.

**Carefully review the chapter on graphs and charts.**

*You might be given an advertisement similar to this.*

<p>"The Best Pizza in LA for the last 27 years"</p> <p><b>Uncle Mike's</b></p> <p>Italian Restaurant</p> <p>Large 16" Pizza - Anyday only \$7.99</p> <p>Coupon expires 8-31-02</p>	<p><b>\$8.00 OFF</b></p>	<p><b>Buy 1 Dinner Entree</b> get \$8.00 off 2nd entree</p> <p><small>Present coupon before ordering</small></p>
	<p>20844 Vanowen Street - Canoga Park</p> <p>346-4545      Hours: Mon-Thu 11-8 Fri 11-10 Sat-Sun Open at 4</p>	
	<p><b>Feed 4 for \$24.95</b></p> <p>1 Lg. Pizza, 4 salads, 4 Spaghetti's, 4 Beverages</p>	
	<p><b>Feed 2 for \$14.95</b></p> <p>1 small Pizza, 2 salads, 2 Spaghetti's, 2 Beverages</p>	

An **economics** question similar to this one could follow.

**4.** According to the advertisement, which of the following statements is correct?

- (1) Uncle Mike imports his pizzas from Italy.
- (2) The customer must choose one method of food purchasing per person.
- (3) A coupon is necessary in order to have \$8 taken off the price of two dinners.
- (4) Four people pay twice as much for a dinner as do two people.
- (5) Credit cards must be used with the "\$8.00 Off" coupon.

The right answer is **(3)**. To answer this comprehension question, you must carefully review the information given. The advertisement does not mention where Mike's pizza came from — **(1)**. There is no mention of a required method for purchasing food — **(2)**. Four people do not need to pay twice as much as two people — **(4)**.

Choice **(3)** is correct. The other advertised items are price listings for various deals, but to get the \$8 discount, you must present the coupon before ordering two entree dinners.

**When answering multiple-choice questions, notice that you often can eliminate choices that are clearly wrong. In this question, you can eliminate four of the five choices, so the remaining one must be right. Usually, you can eliminate only two or three choices, but it is much easier to find the right answer when you choose between two options than among five.**

## APPLICATION QUESTIONS

You could be given an **economics** question similar to the one that follows.

- 5.** A protective tariff is a tax on imports and is designed to “protect” a country from foreign competition.

Which of the following is the best reason to eliminate a protective tariff?

- (1) to strengthen the national government
- (2) to protect shipping
- (3) to protect the wages of labor
- (4) to encourage manufacturing
- (5) to encourage free trade

The right answer is **(5)**. To answer this application question, you must understand the results of passing a protective tariff. Protective tariffs restrict foreign competition. *Why?* Because the import tax (tariff) raises the price of foreign products. This allows home (domestic) products to be more competitive.

In answering this question, you are looking for the one item that would be a reason to *get rid of* protective tariffs. Choices **(1)**, **(2)**, **(3)**, and **(4)** could *all* be reasons *to pass* a protective tariff.

*You might be given statements similar to the following.*

Strip mining is used to recover minerals that lie close to the Earth’s surface. Environmental groups have criticized strip mining as shortsighted and dangerous to the environment.

A **geography** question similar to this could follow.

- 6.** Which of the following is the most likely environmental argument against strip mining?

- (1) Air pollution increases when factories process mineral products.
- (2) Strip mining is economically efficient and environmentally safe.
- (3) Strip mining destroys the natural state of an area.
- (4) State laws have not been effective in controlling mine companies.
- (5) Minerals should be imported rather than mined in the U.S.

The right answer is **(3)**. To answer this difficult application question, you must understand why environmental groups might believe that strip mining is harmful.

The first sentence tells you that minerals are recovered “close to the Earth’s surface,” and the second sentence calls strip mining “dangerous to the environment.” How does the second sentence follow from the first? What must be disturbed to make mining possible? Only choice **(3)** gives an answer to this question.

Choice (1) is wrong because it does not deal directly with strip mining. It deals with mineral products *after* they have been mined, and you do not know whether the mining process was strip mining. Choice (4) also does not deal directly with strip mining, but with mining companies.

Choice (2) is an argument *in favor of*, not *against*, strip mining, and choice (5) is an argument *for* something else, not *against* strip mining.

***You may be given the following type of information.***

Inflation is the continued upward trend in the price of goods without a corresponding change in the quality of the goods. A recession is a period of reduced economic growth resulting in a general downturn in the economy.

You could be given an **economics** question similar to the one that follows.

**7.** Which of the following could happen in an “inflationary recession”?

- (1) Prices and buying power both increase.
- (2) Prices go down but unemployment goes up.
- (3) Prices go up at the same time that unemployment increases.
- (4) Unemployment increases but the price of goods and services is unchanged.
- (5) Jobs are created but only for unskilled workers.

The right answer is (3). To answer this difficult question, you must first understand the key terms. The terms *inflation* and *recession* are defined in the statement, but you must also connect the two terms and apply the new definition. During inflation, prices go up (upward trend in prices); during recession, individuals often lose jobs (reduced economic growth). Choice (3) is the only answer that has a characteristic of inflation (higher prices) *and* a characteristic of a recession (unemployment increases).

Using the same passage:

Inflation is the continued upward trend in the price of goods without a corresponding change in the quality of the goods. A recession is a period of reduced economic growth resulting in a general downturn in the economy.

**8.** Which of the following groups would be injured the most by continued periods of inflation?

- (1) debtors
- (2) people on fixed incomes
- (3) civil service workers
- (4) school teachers
- (5) bankers

The right answer is (2). Remember, you are looking for the group that would be *most* harmed. All people can be affected by inflation to some degree, but people on fixed incomes (such as

retired workers) are the most affected by continued inflation. Goods and services cost more, but their income level does not increase. Those with jobs — choices (3), (4), and (5) — may get salary increases. Debtors, choice (1), could *benefit* from inflation by paying back loans with “inflated” dollars — dollars that have more purchasing power than when the loans were taken.

*You might be given the following type of statements.*

“Hawks” and “doves” are terms for people who favor war and people who favor peace, respectively. The “hawk” prefers a military solution to international problems.

A **history/political science** question similar to this could follow.

**9.** Which of the following actions would a dove most likely favor?

- (1) negotiated settlements
- (2) military conflict
- (3) military retaliation
- (4) victory at any cost
- (5) nuclear confrontation

The right answer is (1). Because hawks and doves are *opposites*, and the “hawk prefers a military solution,” the dove would favor negotiated settlements — that is, solutions that avoid a war.

Choices (2), (3), (4), and (5) are warlike policies and would be associated with hawks. Choice (1) is the only choice that could be associated with a dove. A negotiated settlement (an agreement) ends hostilities at the bargaining table, not on the battlefield.

## ANALYSIS QUESTIONS

*You might be given the following type of paragraph.*

In the 1970s, the State Department believed that if one country in southeast Asia became communist, then other countries would, one by one, become communist. Their analysts pointed to the fact that China was followed by North Vietnam, by South Vietnam, and by Laos into the communist camp.

A **history** question similar to the next one could follow.

**10.** Which of the following conclusions can be drawn from the paragraph?

- (1) It is difficult to predict what would happen in southeast Asia if a country fell to communism.
- (2) All of southeast Asia had fallen to communism.
- (3) The State Department did not recognize the threat of communism in southeast Asia.
- (4) A definable pattern was evident in southeast Asia.
- (5) Popular views seldom influence history.

The right answer is **(4)**. Because one country was followed by three others, you can see a definable pattern in the events and draw this conclusion. What has happened in southeast Asia? Several countries have fallen to communism. Because of this, you can eliminate choices **(1)** and **(3)**.

Choice **(2)** is a conclusion that is not supported by information in the paragraph. You can eliminate choice **(5)** because it has nothing to do with what the paragraph is saying.

*You could be given the following type of paragraph.*

Once again, our City Council has shown all the firmness of a bowl of oatmeal in deciding to allow the rock concert to be held in Patriot's Hall. It is incredible that the City Council rejected a Planning Commission recommendation that would have prohibited amplified bands in the concert hall. The last concert in the city resulted in both violence and destruction of property.

A **political science** question similar to this could follow.

- 11.** The phrase “bowl of oatmeal” is used to
- (1)** condemn the actions taken by the City Council
  - (2)** refer to a new rock group
  - (3)** imply that rock groups eat oatmeal
  - (4)** praise the City Council for its recent vote
  - (5)** urge the City Council to overturn the Planning Commission

The right answer is **(1)**. To answer this question, you must understand the speaker's position and the purpose of his or her choice of words. The speaker holds the City Council responsible for allowing the band to perform. A “bowl of oatmeal,” of course, has no “firmness” at all. By this comparison, the speaker can condemn the council's meekness.

*You might be given the following type of paragraph.*

The vast changes caused by the Industrial Revolution in the United States produced particularly unsettling alterations in the lives of American farmers. The farm population, once comprising up to 90 percent of the total population, shrank from 80 percent in 1860 to 60 percent in 1900 on its way to 26 percent in 1980. Yet, through the years of the late nineteenth century (as in the twentieth), fewer and fewer people produced more and more foodstuffs and dairy products. The self-sufficient family farms were replaced increasingly by large, highly profitable agribusinesses raising cash crops destined for the ever-expanding urban markets and foreign export.

A **history** question similar to this could follow.

12. Which of the following factors is the most likely explanation of the dramatic change in the farm population?
- (1) The farm population increased because there was greater demand for farm products.
  - (2) The farm population dropped from 80% in 1860 to 26% in 1980.
  - (3) The farm population decreased because industrialization made family farms less profitable than larger businesses.
  - (4) Farmers moved to the cities.
  - (5) Modern farm machinery increased farm productivity.

The right answer is (3). Why did the farm population decrease dramatically from 1860 to 1980? The first sentence of the passage says the Industrial Revolution caused vast changes, and the last sentence tells what the changes were.

Although choice (5) is true (and it might be argued that because of increased productivity, farming attracted businesses), choice (3) is the clearer and more specific answer.

*You could be given a cartoon similar to the following.*

**A REAL CHORE.**



The G. O. P.—Well, I've Got That Panama Canal to Dig.  
The Dem. Donk.—That's Nothin'! I Got to Dig Up an Issue.

A **history/government** question similar to this one could ask you about the figure.

**13.** The intention of this cartoon is to show that

- (1) it was very difficult to find workers to work on the construction of the Panama Canal
- (2) animals such as elephants and donkeys were used in the construction of the Panama Canal
- (3) the Democrats opposed the construction of the Panama Canal because it involved the cruel treatment of farm animals
- (4) Republicans and Democrats cooperated in recruiting workers for the construction of the Panama Canal
- (5) with a Republican administration supporting the popular Panama Canal project, Democrats were having difficulty finding another political issue

The right answer is **(5)**. To answer this question, you must review the cartoon and focus on the comments made by the characters.

Notice that the G.O.P. (elephant) says he's got "that Panama Canal to dig." The Dem. Donk. (donkey) says he's "got to dig up an issue."

The elephant symbolizes the Republican Party, the donkey the Democrats. Theodore Roosevelt was a popular president, and the Panama Canal project won favor in the nation. This left the Democrats hard-pressed to find an issue on which they could criticize the Republicans.

*You may be given a photograph similar to this.*





A **history** question similar to this could follow.

- 14.** The photograph of the Japanese internment camp at Manzanar during World War II best supports which of the following statements?
- (1) Japanese Americans lived in an area suitable for growing food crops, as shown in the foreground of the picture.
  - (2) Japanese Americans lived in cities with such amenities as telephones and electricity.
  - (3) Japanese Americans were put into camps in remote and isolated regions.
  - (4) Japanese Americans had many opportunities for recreation, such as skiing, hiking, and mountain climbing.
  - (5) Relatively few Japanese Americans actually lived there.

The right answer is **(3)**. To answer this question, you need to analyze the photograph carefully. Notice that Manzanar was located in a valley (the Owens Valley) in an area that was largely desert and far from major cities. The Sierra Nevada Range is in the background. Japanese Americans were not free to leave.

From the photograph, it is evident that this internment camp was remote and isolated; therefore, choice **(3)** is the best answer.

## EVALUATION QUESTIONS

*You could be given the following type of information.*

The following predictions are presented at a business conference.

- In the next 12 months, the unemployment rate will increase by 2% from the last year.
- In the next 12 months, business profits will decrease by 2% from last year.
- In the next 12 months, economic growth will decrease by 3% from last year.

An **economics** question similar to this could follow.

- 15.** Based on the information, which of the following is the best conclusion about the future of the economy?
- (1) The country will suffer a mild economic decline followed by rapid growth.
  - (2) The country will suffer a severe economic depression.
  - (3) The country will suffer a mild economic recession.
  - (4) The country will see marked economic gains.
  - (5) The country will see no change in its economic outlook.

The right answer is **(3)**. To answer this question, you must understand that the economy is affected negatively by rises in the unemployment rate, and by falls in business profits and



growth rates. You must also know the meaning of words like *depression* (an extended period of severe unemployment, falling wages and prices, and low business activity) and *recession* (a temporary falling off of business activity). Finally, you would have to decide that because of the small percentages (2 and 3 percent), the falling off is mild. Choice (1) is wrong because the information gives no reason to predict growth after the decline.

*You might be given the following sort of paragraph.*

A boycott, named after Captain Boycott, an Irish land agent in the 1880s, is a refusal by the public to buy, sell, or use a product or service in order to force the maker or purveyor to take some action. In colonial America, the colonists successfully boycotted British goods to force the repeal of the Stamp Act. In modern times, shoppers in sympathy with farm workers have boycotted lettuce and table grapes.

A **history** question similar to this could follow.

- 16.** Which of the following statements accurately describes the boycott in colonial America?
- (1) It failed to accomplish its purpose.
  - (2) It was a boycott before the word “boycott” had been coined.
  - (3) It did not distress British merchants or politicians.
  - (4) It helped to increase the British export trade to America.
  - (5) It was more harmful to the Americans than to the British.

The right answer is (2). To answer this question, you must read carefully and notice that the man who gave us the word *boycott* lived in the 1880s. You also must remember that the colonial period in American history was at least 100 years earlier. As choice (2) claims, the word *boycott* had not been invented (coined) when the colonists carried out their boycott.

You can eliminate choices (1), (3), (4), and (5) on the grounds that the paragraph says the boycott was successful and forced the repeal of a tax.

*You could be given the following type of paragraph.*

In recent history, an increasing number of Americans have failed to vote in national elections. Since the presidential election of 1960, when a record 62.8% of voting age Americans went to the polls, voter participation has steadily declined. A political scientist attributed the decline to voter disenchantment with current economic conditions.

A **civics and government** question similar to this could follow.

- 17.** Which of the following statements, if true, would most weaken the political scientist's conclusion?
- (1) More Americans actually voted in 1960 than were originally reported.
  - (2) Voter participation has declined in communist countries.
  - (3) Public information on political issues is limited.
  - (4) The standard of living has substantially increased in the past two decades.
  - (5) Voting facilities are inadequate.

The right answer is (4). To answer this question, you must be able to see which examples support or do *not* support the author's arguments. In this case, you must look for an answer that shows that the American economy did *not* cause voting to decline.

Choice (2) is simply a fact that has no bearing on the answer. Choice (4) would *weaken* the author's conclusion. If the standard of living substantially improved over the last two decades, discontent with economic conditions would not be the reason for the decline, as the author argues.

## Section II: Readings and Visual Information with Several Questions

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Many of the questions on the GED Social Studies Test will consist of written material and/or visual information followed by two to six questions. These “multiple question” sections will contain many types of questions.

You should do the following when dealing with passages or visual information that contain two to six questions:

- Read some of the questions first. This will give you a preview of what the passage or visual information is about.
- Do not read the answer choices when you preread the questions. After reading the questions, read the passage or review the chart for understanding, and then go on to read each question and each answer choice again.
- Decide on the main idea of the passage. What point is the author trying to make?
- Focus on what information the chart or diagram is trying to highlight and how it is presented.
- Identify supporting information. What ideas strengthen the arguments?

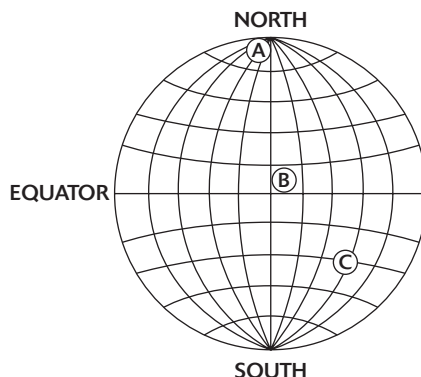
**Remember, you can reread and review as often as necessary.**

The following examples will help you build confidence in working through sets of multiple questions.

## GEOGRAPHY

*You might be given the following type of map.*

Questions 18 and 19 refer to the following map of the Earth.



One of the questions could be similar to this **analysis** question.

**18.** The average daily temperature at point A on the globe is likely to be

- (1) higher than at both points B and C
- (2) higher than at point B but lower than at point C
- (3) lower than at point B but higher than at point C
- (4) lower than at both points B and C
- (5) about the same as at points B and C

The right answer is **(4)**. Point A is very nearly at the North Pole and is most likely to be much colder than point B, which is near the equator, or point C, which is a region likely to be temperate.

To answer this question, you do not need any detailed knowledge of geography. However, you must be able to recognize the most basic feature of a global map — that the poles are at the top and bottom and that the equator divides the northern and southern hemispheres. You do not need any detailed knowledge of climates, but you must know that temperatures at the poles are cold and temperatures at the equator are usually warm.

A second question could be similar to this **analysis** question.

- 19.** Which of the following circumstances would make it most likely that the average daily temperature at point B is lower than that at point C?
- (1) if point B is at sea level and point C is above sea level
  - (2) if point B is inland and point C is on the sea coast
  - (3) if point B is at a high altitude and point C is at sea level
  - (4) if point B is located near a river
  - (5) if point C is located near a river

The right answer is **(3)**. Again, you do not need to know about the climate of any specific place. However, you should know that the temperatures at high altitudes (in the mountains, for example) are likely to be lower than temperatures at sea level. So, although point B is at the equator and point C is not, if point B is at a high altitude, it might be cooler than point C.

## HISTORY

*You may be given the following type of information.*

Questions 20 and 21 refer to the following paragraph.

Secretary of State John Adams, in a speech in 1821, announced that the two American continents should be closed to any future colonization. Adams believed that U.S. interests would best be served by the expulsion of European imperialists from South America. This policy was directed against Spanish and French activity in Latin America. It was believed that dismantling the Spanish empire in the New World would increase American trade and American military and commercial considerations could be more easily protected.

One of the questions could be similar to this **comprehension** question.

- 20.** Which of the following best explains the purpose of Adams' proposed policy?
- (1) to ensure the political stability of Canada
  - (2) to prevent Europe from trading in South America
  - (3) to prevent the political development of South America
  - (4) to gain for America a dominant position in South America
  - (5) to prevent free trade in Europe

The right answer is **(4)**. To answer this question, you must understand the *central* idea of the paragraph. The last sentence of the paragraph clearly says that following this policy would directly benefit U.S. military and commercial interests.

A second question could be similar to this **evaluation** question.

- 21.** Which of the following statements, if added to the paragraph, would indicate that America did not intend to become a new colonial power in South America?
- (1) The United States would not interfere with colonies already established in South America.
  - (2) The United States would establish military bases in Central America.
  - (3) The United States would establish American-backed governments in former Spanish territories.
  - (4) The United States would not prevent Europe from establishing colonies in Asia.
  - (5) The United States would acquire territory in South America as part of its global right.

The right answer is (1). To answer this question, you must apply the *main idea* of the passage (the Americas were closed to European colonization) to a new but related situation. Only choice (1) shows that America did *not* intend to take over European possessions in the New World in order to become a new colonial power itself.

Answers (2), (3), and (5) are wrong because they are all actions that show that America did intend to be a power. Answer (4) is wrong because it has to do with Asia, not South America.

*You may be given information similar to the following.*

Questions 22 and 23 refer to the following information.

Historians, in reconstructing past events, make use of primary and secondary source material. A primary source is an “eyewitness,” or firsthand, account of an event.

One of the questions could be similar to this **application** question.

- 22.** Which of the following is the best example of a primary source?
- (1) an encyclopedia definition of taxes
  - (2) a movie about the French Revolution
  - (3) a biography of Winston Churchill
  - (4) an autobiography of Julius Caesar
  - (5) a historical novel about the westward movement

The right answer is (4). This is a straightforward application question. A primary source is an *eyewitness* account of an event. An autobiography (4) is the biography of a person written *by him or her*. Other examples of primary source materials include a diary, a ship’s log, “live” news coverage, and so forth.

Choice (3), a biography, is a written history of a person, but one written by another person who may or may not have known the subject.

A second question could be similar to this **evaluation** question.

**23.** All of the following accounts of a primary source must be true EXCEPT

- (1) primary sources are more accurate than secondary source materials
- (2) primary sources are normally directly observed events
- (3) a diary may be a primary source
- (4) historians rely on both primary and secondary sources
- (5) a letter may be a primary source

The right answer is (1). To answer this question, you must decide which of the choices is not always true. It is false to say that a primary source, since it is an *eyewitness* account, must be more accurate than a secondary source. Primary sources can often be biased and misleading. For example, a British report on a Revolutionary War battle might differ greatly from an American account of the same battle.

*You may be given information similar to this:*

Questions 24 through 26 refer to the following article.

During the Korean War (1950-1953), the United States was part of a United Nations “peace-keeping” force designed to prevent communist aggression in South Korea. General Douglas MacArthur commanded the United Nations forces. However, fears of the possibility of a world war dominated the political and military climates of the times. Therefore, when General MacArthur requested permission to extend the sphere of battle by striking across the Yalu River and using air strikes over mainland China, President Truman denied his requests.

MacArthur publicly criticized such policies. He felt they undermined the possibility of a military conclusion to the war. MacArthur went so far as to refer to President Truman’s foreign policy as “prolonged indecision,” and even suggested that the restrictive military policies were, in effect, “appeasement” of communism.

President Truman, on April 11, 1951, recalled MacArthur from Korea and subsequently dismissed him from the service. Truman defended the dismissal by arguing that MacArthur’s public criticism increased the risk of a confrontation with Russia.

One of the questions may be similar to this **analysis** question.

**24.** Which statement best gives the main idea of the article?

- (1) The MacArthur-Truman confrontation demonstrated that the president is commander in chief.
- (2) The president allowed Korea to fall to communism.
- (3) The United States followed a policy that favored confrontation with the Soviet Union.
- (4) Air strikes over mainland China were not important.
- (5) General MacArthur was a great man.

The right answer is **(1)**. What is the passage about? The first paragraph tells of the roles of Truman and MacArthur; the second paragraph describes MacArthur's criticism; and the third paragraph describes Truman's action, which showed his real control as commander in chief.

None of the other four answers comes close to the main idea. Choice **(2)** is wrong; the passage does not indicate that Korea fell to communism. Choice **(3)** is also false; the United States tried to avoid confrontation with Russia. Choice **(4)** is also wrong; if air strikes were not important, MacArthur wouldn't have criticized the president. Choice **(5)** is not mentioned in the article.

A second question might be similar to this **analysis** question.

**25.** Which presidential power did President Truman use when he dismissed General MacArthur as commander of the U.N. forces in Korea?

- (1)** the power as commander in chief
- (2)** the power to make treaties
- (3)** the power to make political speeches
- (4)** the power to fire any government official
- (5)** the power to veto laws passed by Congress

The right answer is **(1)**. The president, as commander in chief of the American military, can fire or promote military leaders. (See paragraph 3, sentence 1: "President Truman . . . subsequently dismissed him from the service.")

A third question of the set could be similar to this **comprehension** question.

**26.** All of the following statements are supported by evidence in the article EXCEPT

- (1)** the Korean War lasted for three years
- (2)** the U.S. was part of the United Nations peace-keeping force
- (3)** air strikes over China were permitted after MacArthur was removed from service
- (4)** there were conflicting opinions on how to conduct the war
- (5)** politicians were afraid that the Korean conflict could become a world war

The right answer is **(3)**. To answer this question, you must look for the one *false* statement. Through a process of elimination, you can quickly arrive at the correct answer. Choice **(1)** is true; the article says that the Korean War lasted from 1950 to 1953. Choice **(2)** is true, as indicated by the second sentence of the article. You know from the information that President Truman and General MacArthur disagreed; they had conflicting opinions — **(4)**. And, you are told that "fears of the possibility of a world war dominated the political . . . climates of the times" — **(5)**. So, only choice **(3)** is left as a *false* statement. Air strikes over China were *not* permitted before or after MacArthur's dismissal.

*You may be given a table followed by information, similar to what is below.*

*Questions 27 through 29 refer to the following table and information.*

Number of Armed Services Personnel, in Thousands				
Year	Army	Navy	Marine Corps	Air Force
1950	593	381	74	411
1955	1,109	661	205	960
1960	873	617	171	815
1965	969	670	190	825
1970	1,323	691	260	791
1975	784	535	196	613
1980	777	527	188	558
1985	781	571	198	602
1990	732	579	197	535
1995	509	435	175	400

There are more than 20 million war veterans living in America. When an expansion of military programs for women began in 1973, women accounted for only 2.5% of active duty troops. By 1997, women represented 13.6%.

You could be given an **analysis** question similar to the one that follows.

- 27.** Which of the following conclusions is best supported by the information presented?
- (1) More women were in the Army in 1970 than in 1955.
  - (2) More women belonged to the Marine Corps in 1970 than in 1975.
  - (3) Without the expansion of military programs for women, the number of women in the armed services in 1997 would probably be much lower.
  - (4) The percentage of women on active duty could not have grown without the expansion of military programs in 1973.
  - (5) Fewer women joined the Marine Corps than enlisted in the Navy between 1985 and 1990.

The right answer is **(3)**. To answer this question, you must analyze the textual information about military programs for women. You also should consider what makes an event happen.

More women were able to join the armed forces when programs for them were expanded in 1973. Choices **(1)**, **(2)**, and **(5)** are not addressed in the information given. Choice **(4)** is incorrect because other factors could have allowed the number to increase and because the answer mentions military programs in general rather than those specifically for women.



A second **analysis** question could be similar to the one that follows.

**28.** Which conclusion about U.S. armed services personnel can be drawn from the table?

- (1) After 1970, the armed services found it difficult to recruit personnel.
- (2) More personnel left the Army between 1970 and 1980 than joined it.
- (3) Before 1973, women were not allowed to serve on active duty.
- (4) Between 1950 and 1975, the Army had a greater number of personnel than did any of the other services.
- (5) The chart includes 20 million living war veterans.

The right answer is **(4)**. To answer this question, you need to analyze the information carefully.

Choice **(1)** cannot be concluded because you are given no information regarding the difficulty of recruiting personnel. Choice **(2)** cannot be concluded because no information is given regarding how many people left the Army. Choice **(3)** cannot be concluded because you don't know what women were allowed to do before 1973. Choice **(5)** cannot be concluded because the information simply mentions that "there are more than 20 million war veterans living in America."

Choice **(4)** can be concluded because at no point on the chart is the number of personnel in the Army lower than the number in the other services.

A third question could be similar to this **comprehension** question.

**29.** According to the information in the table, which of the following statements is correct?

- (1) The numbers in each column represent veterans of each service as well as active duty personnel.
- (2) The Marine Corps excludes women from its numbers, as women are not permitted to serve on active duty.
- (3) The figures represent the total number in thousands rather than actual numbers.
- (4) The Navy has consistently needed more personnel than the Air Force.
- (5) There are more volunteers in the Army than there are draftees.

The right answer is **(3)**. By representing the figures in thousands instead of actual numbers, the table is simpler to read. The actual figure would add three zeros to every number in the table.

*Questions 30 through 33 refer to the following passage.*

The foreign policy of the United States through the third, fourth, and fifth decades of the nineteenth century reflected many of the nation's internal characteristics. The relationship between expansion to the south and west and rising sectional hostility over the question of slavery is obvious. The many elements of the broad and complex social force generally termed "manifest destiny" included an altered but distinct divine right to save or liberate, varieties of which have been found throughout the American experience. Jackson's foreign

policy was marked by a vigor which seemed aggressive, even warlike, considering the modest scope of the disputes in question. While Polk’s foreign policy certainly contained elements of nationalist mission and willingness to go to war as well, the diplomacy which took the nation into the war with Mexico, won the Pacific coast, and settled the Oregon boundary dispute was marked by a new sensitivity. Throughout these years, the United States retained a large measure of freedom for internal development and expansionist diplomacy through the power of the British navy, which kept effective the 1823 Monroe Doctrine — European nations would not interfere in the affairs of the Americas.

You could be asked an **application/analysis** question similar to the one that follows.

**30.** Which of the following best defines the term “manifest destiny”?

- (1) It describes how the United States acquired territory to the south and west in the first half of the nineteenth century.
- (2) It is the belief that the United States would someday include all the land between the Atlantic and Pacific Oceans.
- (3) It is the official diplomatic policy of the United States government.
- (4) It refers to a section in the U.S. Constitution that calls for acquiring new territory.
- (5) It was in a statement made by President Andrew Jackson to threaten Mexico into giving its northern provinces to the United States.

The right answer is **(2)**. To answer this question, you must read the passage carefully and understand how the U.S. applied the meaning of “divine right.” Many supporters of expansion claimed that it was God’s will that the United States would expand across the continent, and that this belief therefore justified the actions that would have to be taken to realize that goal.

A second question could be similar to this **analysis** question.

**31.** Which of the following was a reason for the United States justifying its expansionist impulses?

- (1) The British government offered the use of its navy to protect the United States from war with Mexico.
- (2) Presidents Jackson and Polk knew that the British government would yield to American demands for the Oregon territory.
- (3) The “divine right” feeling of many Americans led them to forcefully pursue the acquisition of a new territory.
- (4) The nation needed new territory in order to expand the number of slave states.
- (5) Without new territory, the United States would remain militarily weak against Mexico and Great Britain.

The right answer is **(3)**. To answer this question, you have to analyze the passage and understand the strength of this feeling of “divine right.” Supporters of “manifest destiny” believed that the means justified the ends, so the actions taken to realize the goal were appropriate.

A third question could be similar to this **evaluation** question.

**32.** Which of the following comparisons between the United States and Great Britain is supported by the information?

- (1) Great Britain and the United States shared similar interests that made possible America’s development and expansion.
- (2) Great Britain lacked the military and naval resources to resist the growing power of the United States.
- (3) The military forces of the United States closely matched the naval power of Great Britain.
- (4) Both nations were concerned about Mexico’s inability to defend its northern provinces.
- (5) The Monroe Doctrine of 1823 provided a balance of power between Great Britain and the United States.

The right answer is **(1)**. To answer this question and make this comparison, you must understand the positions of Great Britain and the United States. Great Britain’s support of the Monroe Doctrine of 1823 enabled the United States to develop its resources without the threat of rival nations.

A fourth question could be similar to this **comprehension** question.

**33.** According to the information, which statement best explains American foreign policy between 1830 and 1850?

- (1) It was based on the acquisition of new territory for the plantation-based economy the slave states wanted.
- (2) Americans desperately needed outlets for foreign trade, and acquisition of territory would provide those outlets.
- (3) Presidents Jackson and Polk considered international disputes to be of minor importance and concern to U.S. foreign policy.
- (4) Acquisition of the Oregon territory and territory from Mexico reflected a unified nation that supported a set of expansionist goals.
- (5) It included a wide range of political and economic factors, including slavery, expansion, and an increasing support for sectionalism that threatened the nationalist impulse.

The right answer is **(5)**. Slavery, expansion, and sectionalism all influenced the formation of American foreign policy. “Manifest destiny” represented a nationalist approach to resolving the different viewpoints.

## Section III: Questions Based on Definitions

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One type of question gives definitions of five related terms or categories, and then asks you to determine which of the five applies best to a situation described in each question.

The following questions will give you practice in and examples of this type of question.

- Read each definition carefully. Notice the difference among the categories.
- Match the situation described in each question to the corresponding category.
- Refer to the category as often as necessary.

### ECONOMICS

*You may be given information and categories similar to this.*

*Questions 34 through 36 refer to the following information.*

A business combination consists of a group of firms brought together to increase their profits. The following are brief descriptions of five types of business combinations frequently used in the twentieth century:

1. **Cartel** — Active competitors agree to fix prices, divide territories, and pool resources according to a predetermined formula.
2. **Trust** — Independent firms make arrangements to turn over their stock to a trustee, who then exercises full control on behalf of the participating firms.
3. **Holding company** — A corporation gains control of companies related to the corporation's interests; the corporation holds significant stock control on behalf of the participating firms.
4. **Merger** — A corporation acquires the assets of a smaller firm or firms, which are then dissolved. The resulting corporation controls an increased share of the economic market.
5. **Conglomerate** — A firm in one industry takes control of a firm in another unrelated industry.

Each of the following statements describes a process that takes place in one of the preceding business combinations. Choose the combination in which the process described would most likely occur. The categories may be used more than once in the set of questions. No one question has more than one best answer.

An **application** question similar to this could follow.

**34.** The second largest steel company in the U.S. purchases at market value the eighth largest domestic steel company.

The type of business combination described is a

- (1) cartel
- (2) trust
- (3) holding company
- (4) merger
- (5) conglomerate

The right answer is **(4)**. This question clearly describes a *merger*. The firm conducted business in the same industry — steel.

An **application** question similar to this might be next.

**35.** A number of Middle Eastern oil-producing countries agree with other oil-producing nations in Africa, Asia, and South America to fix the price of oil and limit its production. The group calls itself OPEC.

The type of business combination described is a

- (1) cartel
- (2) trust
- (3) holding company
- (4) merger
- (5) conglomerate

The correct answer is **(1)**. This question fits the definition of an international *cartel*.

Another **application** question similar to this could be next.

- 36.** A group of companies agrees to keep their prices the same. They accomplish this by exchanging stock certificates in formerly competing corporations in which certificates entitle them to voting power and dividends. Unlike a holding company, members maintain their own identity.

The type of business combination described is a

- (1) cartel
- (2) trust
- (3) holding company
- (4) merger
- (5) conglomerate

The right answer is (2). Notice that this information tells you that this combination is *unlike* a holding company, so choice (3) *must* be wrong.

## ECONOMICS/POLITICAL SCIENCE

You could be given a set of questions similar to this.

*Questions 37 and 38 refer to the following information.*

Economic systems are classified according to the way wealth is distributed among groups in a society. Like political systems, they can be conservative or ultra-liberal. Listed below are five types of economic systems and brief descriptions of how wealth is distributed.

- 1. Pure capitalism** — Basic economic decisions and activities are made and carried out by individuals and businesses without government interference.
- 2. Modern capitalism** — Private ownership of the means of production and freedom of economic choice are the rule, except as modified to a limited extent by government regulations.
- 3. Democratic socialism** — The state is the owner of the major means of production, but political freedom is guaranteed.
- 4. Communism** — All means of producing and distributing wealth are collectively owned and operated by the government; all market factors are controlled by the government.
- 5. Fascism** — Private ownership is permitted but subject to complete government control of wages, prices, investments, and profits.

Each of the following statements describes a process that takes place in one of the economic systems described above. Choose the system in which the process would most likely occur. The categories may be used more than once in the set of questions. No one question has more than one best answer.

An **application** question similar to this could follow.

**37.** A group of business investors organizes a corporation to fund and operate a railroad company. The government charters the corporation but limits the geographic area in which the company can operate.

The type of economic system described is

- (1) pure capitalism
- (2) modern capitalism
- (3) democratic socialism
- (4) communism
- (5) fascism

The right answer is **(2)**. This question describes *modern capitalism*. Modern capitalism allows ownership subject to government regulation (government charters the corporation and defines the geographic limit). Under democratic socialism — **(3)**, private ownership of railroads would not be permitted.

An **application** question similar to this could be next.

**38.** A government strictly controls the entire economy. The details of running an industry are rigidly controlled, and government planning is forced upon private industry.

The type of economic system described is

- (1) pure capitalism
- (2) modern capitalism
- (3) democratic socialism
- (4) communism
- (5) fascism

The right answer is **(5)**. This question describes *fascism*. The key to answering this question is to understand that the entire economy is controlled, but private industry is permitted. (The question says that “planning is forced upon private industry,” so you know that private industry is not eliminated.) Communism does not permit private ownership in an industry.





## What to Expect

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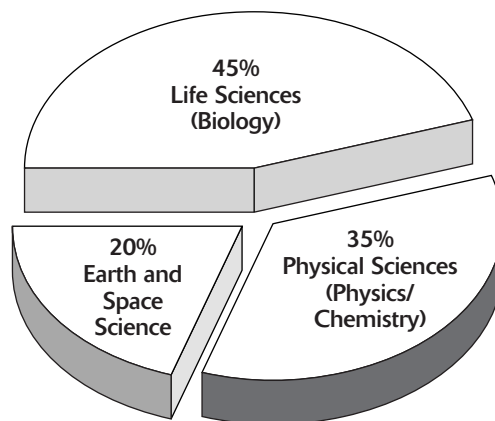
The Science Test is 1 hour and 20 minutes long and contains 50 multiple-choice questions.

- ⇒ Expect questions that test how well you understand major concepts, ideas, and principles associated with science.
- ⇒ Expect settings that are familiar from everyday life. For example, questions about boiling water in a kitchen or growing flowers in a garden are set in familiar locations.
- ⇒ Expect questions that deal with the natural environment, everyday occurrences, and with explanations of natural phenomena.
- ⇒ Expect questions that test a high school-level understanding of science.
- ⇒ Expect fewer than half of the questions to come from the life sciences (biology), about a third from the physical sciences (physics and chemistry), and about a fifth from Earth and space science.
- ⇒ Expect about half of the questions to ask you to understand information in diagrams, charts, maps, graphs, and tables.
- ⇒ Expect some of the questions to be in groups, or sets — that is, two to five questions that refer to the same information, diagram, or chart.

## What You Should Know

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The Science Test contains the following areas:



The areas tested by the Science Test

You should be able to answer questions from information given in the following areas.

## **LIFE SCIENCES (45%)**

### **(Biology)**

Understand:

- Information that discusses how **plants** and **animals** are studied by **observation** and **classification**
- The **scientific method** is a way of learning about the physical world
- Excerpts that explain how **evolution** produced the variety of living things found on Earth
- Information that deals with how **plants** and **animals** **grow** and **reproduce**
- Information that discusses how **DNA** controls the **metabolic processes** of plants and animals
- How the **bodies of living things** are **organized** by tissue, organ, and system
- The relationships between **living things** and their physical and biological environments

## **PHYSICAL SCIENCES (35%)**

### **(Physics and Chemistry)**

#### **Physics**

Understand:

- **Energy** is the ability to **move objects**
- Information that explains Newton's law of motion and the relationship between **force** and **motion**
- Information that discusses how some forms of **energy** can **move** from one place to another by means of **waves**
- Excerpts that discuss the **difference** between nuclear **fission** and **fusion**

#### **Chemistry**

Understand:

- The **atom** is made of **protons**, **neutrons**, **electrons**, and other small particles of matter
- Information about **chemical bonding** and its relationship to the **periodic table**
- Information that explains how **life** is based on the **chemical interactions** of **carbon** with other elements
- Information in charts or descriptions that show how **symbols** are used for **chemical equations**, **elements**, and **compounds**

**EARTH AND SPACE SCIENCE (20%)**

Understand:

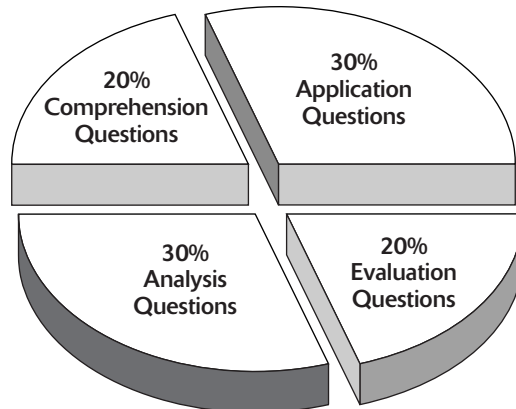
- The universe is constantly changing
- **Erosion, uplift, and sedimentation** are always at work on the Earth's **crust**
- The Earth's history can be read in the **fossils** and changes in the Earth's **rocks**
- Theories concerning the **beginning of the universe**

## What to Look For: Kinds of Questions

The GED Science Test will test higher-level thinking skills. The exam will *not* ask you simply to remember facts or basic principles of science. For example, you would *not* be expected to know the formula for the acceleration of gravity, or Einstein's general theory of relativity. However, you *are expected* to understand important concepts and principles in science.

- Look for questions that ask you to solve a problem.
- Look for questions that ask you to use your reasoning ability.

The questions on the Science Test are grouped as shown in the following pie chart.



The question types on the Science Test

**Comprehension Questions (20%):** You should be able to understand the meaning of information presented in readings as well as in maps, diagrams, charts, and graphs. Comprehension questions can be answered simply from the information presented. Comprehension questions will ask

- What is the **main point**?
- What is **suggested** by the information?

**Application Questions (30%):** You should be able to reason one step beyond the comprehension level. You must apply information already stated to solve a problem in a different situation. Application questions will ask

- Can you use **given information** in a **new setting**?
- Can you use **suggested information** in a **new setting**?

**Analysis Questions (30%):** You should be able to understand the important parts of the information given and the relationships between these parts. You must be able to find the methods used to show how ideas are developed. Analysis questions will ask

- Can you find **ideas** that are **not specifically stated**?
- Can you tell what **makes an event happen** and what are the **results**?
- Can you tell the **difference** between a **fact** and a **hypothesis**?

**Evaluation Questions (20%):** You should be able to judge the accuracy of stated or assumed material and evaluate its importance. Evaluation questions will ask

- Can you tell whether the information given would **support a point of view**?
- Can you detect why **events occur**?
- Can you find why a **hypothesis** is **not** correct?
- Can you **predict an outcome**?

## About the Directions

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Following are the directions you'll find in the Science Test. Become very familiar with these directions *now* so that you will be comfortable with them when you take the actual test. The directions you'll see on the actual test will be wider on the page. Here, though, room has been left for the boxes you see on the right and the left. Read the following directions straight through, and then carefully read the information in the boxes. It points out and explains important points in the directions.

### SCIENCE

#### Tests of General Educational Development

#### Directions

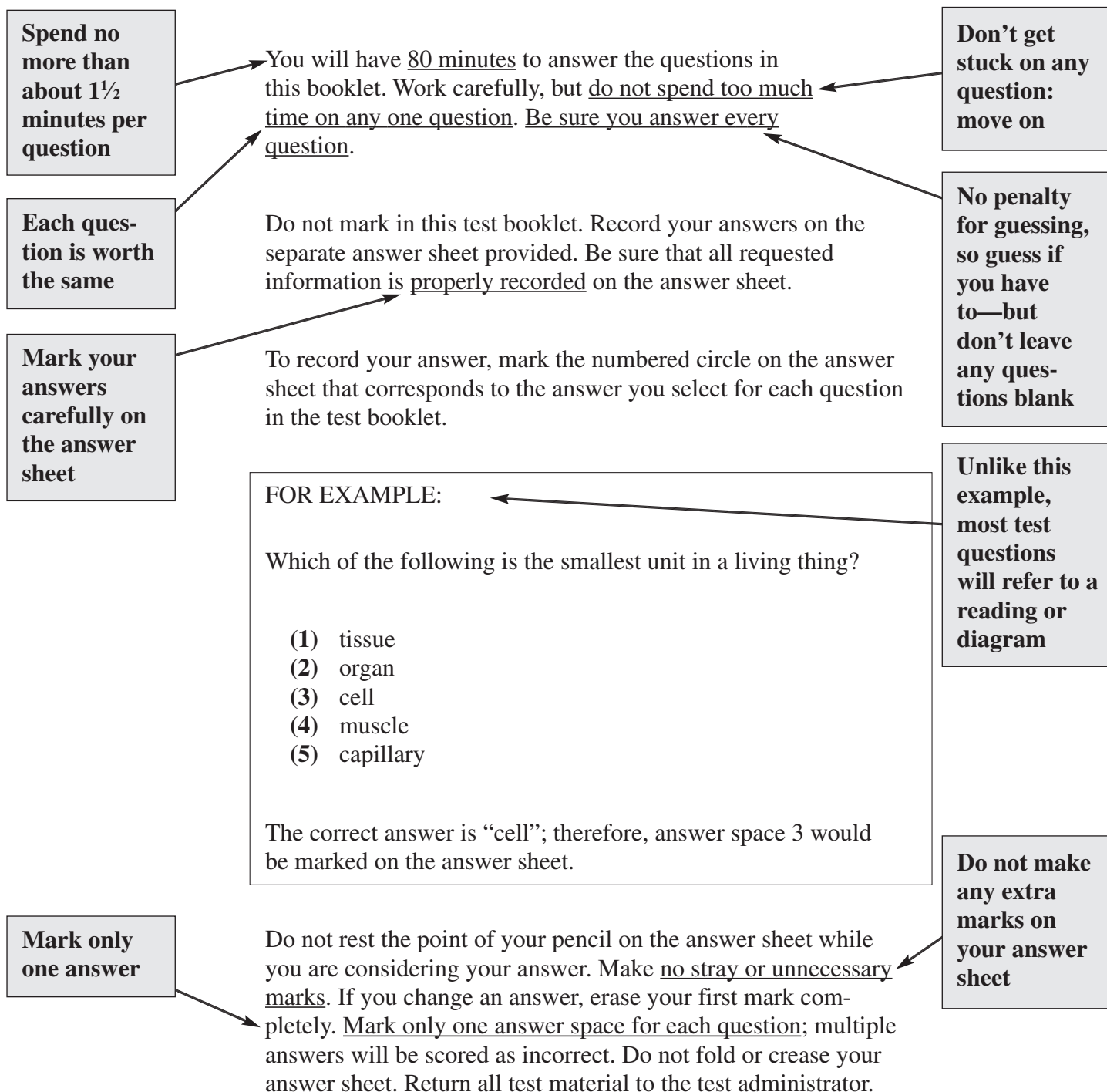
All questions have five choices

Information from short readings or diagrams

General concepts; don't memorize specific facts

Look back at the information as often as you need to

The Science Test consists of multiple-choice questions intended to measure general concepts in science. The questions are based on short readings that often include a graph, chart, or figure. Study the information given and then answer the question(s) following it. Refer to the information as often as necessary in answering the questions.



## What You Should Do

Read the information looking for the following key points:

- What is the main idea?
- What does the information suggest?
- Can you see causes and results?

**Refer to the information, passage, diagram, chart, graph, or map as often as necessary.**

Diagrams, charts, graphs, and maps often take a second and third look. Take an extra few moments to make sure you understand how to read the diagram, chart, graph, or map. Know what information is being presented.

**Make sure you understand what the question is asking, for example:**

- Which of the following aspects of cats would a veterinarian consider *most* important?
- All the following duties are performed by a male ant **EXCEPT** . . .
- The occurrence of tidal waves in this region indicates . . .
- Which of the following is the **BEST** explanation for . . .
- Which of the following behaviors is similar to . . .
- Which of the following has the **MOST** value to . . .
- This relationship would **BEST** be classified as . . .
- Why is it dangerous to . . .

The following four sections use examples to explain the **question types**, show you **what to look for**, and point out **what you should do**.

## Section I: Biology Questions

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You may be given a **comprehension** question similar to the question that follows.

1. During the fertilization of a flower, it is necessary for pollen to reach the central pistil. This fertilization is one mode of sexual reproduction. A male sex cell (pollen) must unite with a female sex cell (ovum within the pistil) to produce a fertile embryo.

This reproduction requires the contact of two germ cells because

- (1) a chemical reaction initiates the fertilization
- (2) each contains only half the genetic material
- (3) individual cells carry inadequate nutrients
- (4) the wind is too erratic for reliable stimulation
- (5) vegetable reproduction is by the mechanism of budding

The right answer is (2). In this question, you are being asked *why* two germ cells are needed.

The information given explains that this is a form of *sexual* reproduction. “A male sex cell (pollen) must unite with a female sex cell (ovum within the pistil) to produce a fertile embryo.” So, each sex cell contains only half the chromosomes (the genetic material) that the plant needs.

You could be given a **comprehension** question similar to the question that follows.

2. An amoeba lives in water containing dissolved oxygen, which diffuses, or spreads, from an area of high concentration to an area of low concentration, inward through the cell membrane. The creature's metabolism then produces waste products such as carbon dioxide, which diffuse outward through the cell membrane.

Which of the following biological processes is **MOST** helpful in explaining this life process, or metabolism, of the amoeba?

- (1) hearing
- (2) photosynthesis
- (3) reproduction
- (4) respiration
- (5) secretion

The right answer is (4). You are again asked to understand the information and choose the best explanation for the life process given. Notice the key words — *oxygen* and *carbon dioxide*.

As in other, larger animals, respiration is the central life process during metabolism. Oxygen is taken in to release stored chemical energy, with the production of waste carbon dioxide and water. Remember human respiration: You inhale air rich in oxygen and exhale air rich in carbon dioxide.

Another type of **comprehension** question could be similar to the one that follows.

3. Milk is pasteurized in order to prevent live disease organisms from being spread to the general public. This heating of the milk for brief periods of time kills any live bacteria but would be useless in the case of chemical contamination.

Which of the following medical disorders might be prevented by pasteurization?

- (1) halitosis
- (2) lead poisoning
- (3) liver cancer
- (4) tuberculosis
- (5) human immunodeficiency virus

The right answer is (4). To answer this question, you must understand that pasteurization kills “any live bacteria.”

Now, which answer choice is a medical disorder caused by live bacteria? Tuberculosis could be prevented by pasteurization because it is caused by bacteria.

You could be given an **application** question similar to the question that follows.

**4.** Deer and rabbits are plant-eaters, whereas eagles and wolves are flesh-eaters.

Within a single natural community, a rabbit would **NOT** interact directly with

- (1) deer
- (2) eagles
- (3) grasses
- (4) shrubs
- (5) wolves

The right answer is (1). Notice that the key word is *directly*. You are looking for what would *not* interact *directly*.

The rabbit would feed on grasses and shrubs. Eagles and wolves would eat the rabbit. But the deer would only *indirectly* compete with the rabbit for the same food.

You could be given an **application** question similar to the question that follows.

**5.** Photosynthesis is the process by which green plants change carbon dioxide and water into sugar and oxygen.

Which of the following should happen to the air in a sealed greenhouse containing many plants?

- A. The air becomes poorer in carbon dioxide.
- B. The air becomes poorer in oxygen.
- C. The air becomes richer in carbon dioxide.

- (1) A only
- (2) B only
- (3) A and B only
- (4) B and C only
- (5) A, B, and C

The right answer is (1). Because plants use carbon dioxide and water, the air would become *poorer* in those compounds. So, **A** must be true. You can eliminate answer choices (2) and (4) because they do not contain **A**.

Because the plants produce sugar and oxygen, the air would become *richer* in oxygen. So, **B** must be false, and you can also eliminate choices (3) and (5). This leaves only answer choice (1).



You might be given an **analysis** question similar to the question that follows.

- 6.** Sickle-cell anemia is a disease you can inherit in which the hemoglobin (an iron-bearing, oxygen-transporting) molecule is abnormal. The abnormal molecule has one incorrect amino acid within a chain of more than 300 amino acids.

Which of the following **BEST** accounts for the origin of this disorder?

- (1) carbon monoxide poisoning
- (2) infection
- (3) mutation
- (4) poor nutrition
- (5) age

The right answer is **(3)**. To answer this question, you need to carefully analyze the information given.

Notice the important words — *inherit*, *abnormal molecule*, *amino acids*. These key words should lead you to the correct answer. Chromosomes carry coded messages (amino acids) with information for the building of the molecules necessary for life. Sometimes the message is slightly altered (abnormal molecule), and that *mutation* would be passed on to succeeding generations (inherited).

Another type of **analysis** question could be similar to the question that follows.

- 7.** The Chernobyl nuclear power plant explosion released many radioactive elements, including radioactive iodine. Thyroid glands are known to accumulate iodine, an essential element in its hormone. Soon after the explosion, many Europeans took medical doses of potassium iodide.

Which of the following statements **BEST** explains how potassium iodide helped protect them from some radioactivity?

- (1) It restored their normal electrolyte balances.
- (2) They had saturated, or filled, their glands with nonradioactive iodine.
- (3) The potassium was an antidote for radioactive iodine.
- (4) They knew the radioactivity would decay rapidly.
- (5) The thyroid hormone would stimulate resistance to radioactivity.

The right answer is **(2)**. To answer this question, you must first carefully analyze the information given.

Radioactive iodine was released by the power plant and would probably be absorbed by the thyroid glands of many Europeans. So, by taking harmless iodine in the solution of potassium iodide, these Europeans temporarily saturated their thyroid glands in that element. Their bodies would then not accumulate any radioactive iodine.

You could be given an **evaluation** question similar to the question that follows.

- 8.** The tumbleweed almost never grows anywhere but on plowed fields, overgrazed ranges, or along roads.

Which of the following **BEST** explains the relationship of the tumbleweed to its environment?

- (1) It can't compete with established plants.
- (2) It destroys the natural environment.
- (3) It interrupts the customary food chain.
- (4) It is a delicate, endangered species.
- (5) It requires an unusually dry environment.

The right answer is **(1)**. To answer this question, you must evaluate the relationship between a tumbleweed and its environment.

The description tells you that the tumbleweed does not grow in normal, undisturbed communities. Evidently, it is not able to compete successfully with established plants.

Another type of **evaluation** question might be similar to the one that follows.

- 9.** Life can be defined in many ways. Some of the points considered in defining life are metabolism, growth, reproduction, and motion. Viruses are sometimes classified as living organisms and sometimes as chemical compounds.

Which of the following properties is the **BEST** evidence for considering viruses as being alive?

- (1) They are submicroscopic, commonly smaller than bacteria.
- (2) They are found inside animals, plants, and one-celled organisms.
- (3) They may produce diseases in their host organisms.
- (4) They possess nucleic acids to reproduce themselves.
- (5) They possess the ability to become larger in size.

The right answer is **(4)**. To answer this question, you must evaluate the given information and decide which is the *best* evidence.

Metabolism, growth, and motion are all points considered in defining life. The most important point about life, however, is that living organisms can reproduce. Because viruses have that key ability, they usually are classified as being alive. Choice **(5)**, the ability to become larger in size, may be a possibility. However, nonliving things can also become larger in size—such as objects becoming larger because of heat. Remember, you are looking for the best evidence.

You could be given an excerpt similar to the following, followed by two questions.

*Questions 10 and 11 refer to the following information.*

Darwin suggested that natural selection was the method used for the evolution of life forms. Individuals that were able to compete more successfully for food would reproduce more often than less-able individuals, and, therefore, a species would gradually change toward its more successful variations. Small changes, accumulated over millions of years, could lead to strikingly new forms of life.

An **analysis** question similar to this could follow.

**10.** In Darwin’s theory, the word “selection” means

- (1) evolution of life
- (2) gradual reproduction
- (3) natural formation
- (4) successful competition
- (5) variation of ability

The right answer is (4). To answer this question, you must analyze the information given. The key phrase is “Individuals that were able to compete more successfully. . . .”

The individuals that would be selected for reproduction would tend to be those that competed most successfully. Natural selection is often described as “the survival of the fittest.”

A second **analysis** question similar to the following could be next.

**11.** For small changes to accumulate eventually into a new life form, each single change or variation in an organism would have to be

- (1) frequent
- (2) inheritable
- (3) mechanical
- (4) probable
- (5) unstable

The right answer is (2). To answer this question, you must analyze the information and question carefully. Notice the important phrase — “changes to accumulate.”

Only changes that could be *inherited* would accumulate (add up). Over many generations, the many small changes would persist and result in a large overall change of the organism.

You could be given information in chart or table form similar to the table that follows.

*Questions 12 through 15 refer to the following table.*

Characteristics of Some Major Groups of Animals			
<b>Animal Group</b>	<b>Mobility (ability to move)</b>	<b>Symmetry (evenly proportioned)</b>	<b>Further Description</b>
Arthropods	high	bilateral	organism divided into segments and organism covered with external skeleton
Chordates	high	bilateral	organism has internal skeleton
Coelenterates	none	radial	cavity surrounded by tentacles
Echinoderms	slight	five-fold	organism has heavy protective skeleton
Mollusks	slight	bilateral	organism has one or two hard shells

*Note: "Bilateral symmetry" means that the left side and the right side are mirror images.*

An **application** question similar to the one below could follow.

**12.** A clam is a muscular animal within a matching pair of protective shells.

The clam would be **BEST** classified in which of the following animal groups?

- (1) arthropods
- (2) chordates
- (3) coelenterates
- (4) echinoderms
- (5) mollusks

The right answer is **(5)**. The clam is a mollusk.

You should notice the phrase "matching pair of protective shells." This is part of the description of a mollusk. The clam has slight mobility on the sea floor, and it lives within two hard shells.

An **analysis** question similar to the question below might follow.

**13.** An eagle, a shark, and a squirrel are all vertebrates, characterized by a supportive backbone and advanced nervous system.

Which of the following animal groups would include all vertebrates?

- (1) arthropods
- (2) chordates
- (3) coelenterates
- (4) echinoderms
- (5) mollusks

The right answer is **(2)**. All vertebrate animals belong in the group of chordates.

The *internal skeletons* of the eagle, shark, and squirrel should point you toward the second answer choice. A human being is also classified as a chordate.

Another **application** question similar to the one below could follow.

**14.** The common starfish is not a fish at all. It can flex its stiff body to move along the sea floor by slow crawling.

The starfish would **BEST** be classified in which of the following animal groups?

- (1) arthropods
- (2) chordates
- (3) coelenterates
- (4) echinoderms
- (5) mollusks

The right answer is **(4)**. The starfish is an echinoderm. To answer this question, you need to apply the information given and your knowledge of a starfish.

Because the starfish moves slowly, you can eliminate answer choices **(1)**, **(2)**, and **(3)**. You can eliminate choice **(5)** because a starfish does *not* have shells. Its body is stiff because of the heavy case, which protects it against predators. The starfish has five arms, so its *five-fold symmetry* is another good clue.

The last question could be an **application** question similar to the one below.

**15.** Bees, spiders, and lobsters have bodies with many common features.

Which of the following is the **BEST** classification for all three of these animals?

- (1) arthropods
- (2) chordates
- (3) coelenterates
- (4) echinoderms
- (5) mollusks

The right answer is **(1)**. Because all these animals are very mobile, answer choices **(1)** and **(2)** are the only ones possible. The segmented bodies and hard external skeletons are the final clues.

You could be given information in a method similar to the following.

*Questions 16 through 18 refer to the following information and chart.*

There are many factors that should be taken into account to find an individual's "ideal" weight. In general, however, fat ordinarily accounts for 10 to 20 percent of the weight of an adult male, and about 25 percent of the weight of an adult female. Any more fat than this is considered unnecessary and unhealthy. The following chart shows acceptable weight in pounds according to height for men and women.

<b>Height ft. in.</b>	<b>Men acceptable weight</b>	<b>Women acceptable weight</b>
4 8		88–113
4 9		90–116
4 10		92–119
4 11		94–122
5 0	106–135	96–125
5 1	109–138	99–128
5 2	112–141	102–131
5 3	115–144	105–134
5 4	118–148	108–138
5 5	121–152	111–142
5 6	124–156	114–146
5 7	128–161	118–150
5 8	132–166	122–154
5 9	136–170	126–158
5 10	140–174	130–163
5 11	144–179	134–168
6 0	148–184	138–173
6 1	152–189	
6 2	156–194	
6 3	160–199	
6 4	164–204	

A **comprehension** question similar to this could follow.

**16.** The maximum acceptable weight for a 5'9" man is

- (1) 136 lbs.
- (2) 158 lbs.
- (3) 170 lbs.
- (4) 174 lbs.
- (5) 179 lbs.

The right answer is **(3)**. To answer this question, you must simply read the information next to 5'9" in the men's column (136–170). The maximum (the largest amount) is 170 pounds.

An **analysis** question similar to the one below could be next.

**17.** The **GREATEST** range of acceptable weight is for a woman who is which of the following?

- (1) 5'8"
- (2) 5'9"
- (3) 5'10"
- (4) 5'11"
- (5) 6'0"

The right answer is **(5)**. To answer this question, you must notice that the *range* (the distance between acceptable weights) increases as the *weight* increases. So, it also increases as the *height* increases.

The largest range for a woman is 35 pounds, which is for a woman 6'0" tall ( $173 - 138 = 35$ ).

Another **analysis** question similar to the one below could follow.

**18.** Jack weighs the maximum acceptable weight for a 6'3" man. Gloria weighs the minimum acceptable weight for a 4'8" woman.

What is the difference between their weights?

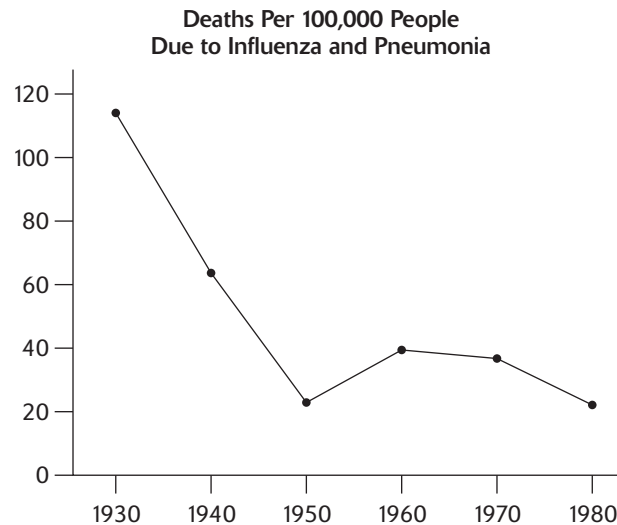
- (1) 25 lbs.
- (2) 72 lbs.
- (3) 86 lbs.
- (4) 101 lbs.
- (5) 111 lbs.

The right answer is **(5)**. To answer this question, you must read the chart carefully and do one simple calculation.

If Jack is 6'3", his maximum (highest) weight is 199 pounds. Gloria's minimum (lowest) weight is 88 pounds. Now,  $199 - 88 = 111$  pounds.

You could be given a graph similar to the one that follows.

Questions 19 and 20 refer to the following graph.



A **comprehension** question similar to this one could follow.

- 19.** Between which of the following years did the deaths per 100,000 people due to influenza and pneumonia increase?
- (1) 1930 and 1940
  - (2) 1940 and 1950
  - (3) 1950 and 1960
  - (4) 1960 and 1970
  - (5) 1970 and 1980

The right answer is **(3)**. To answer this question, you must understand how to read the information given in a line graph.

Because the question is asking for the years with an *increase* between them, look for the line that slopes up to the right. The only increase would be between 1950 and 1960.



A **comprehension** question similar to the question that follows could be next.

**20.** All the following can be determined from the graph **EXCEPT**

- (1) the decrease in deaths per 100,000 people due to influenza and pneumonia from 1940 to 1950
- (2) the years that had the fewest deaths per 100,000 people due to influenza and pneumonia
- (3) the years that had the greatest number of deaths per 100,000 people due to influenza and pneumonia
- (4) the decrease in deaths per 100,000 people due to influenza and pneumonia from 1970 to 1980
- (5) the decrease in deaths per 100,000 people due only to pneumonia from 1940 to 1950

The right answer is **(5)**. To answer this question, you must understand what information the graph is giving you.

The graph does *not* separate influenza deaths from pneumonia deaths. So, you cannot determine information regarding pneumonia *alone*.

## Section II: Physics Questions

You could be given a **comprehension** question similar to the question that follows.

**21.** If Regina shouts “Hello,” her vocal cords vibrate and start the air vibrating. Although individual molecules in the air do not move very far, each moving molecule passes on that motion to the next molecule.

Which of the following would be the **BEST** explanation of the physical process that enables someone to hear her shout?

- (1) A gas expands in all directions to reach you.
- (2) The molecules in the atmosphere are temporarily deformed.
- (3) Movement is generally from high pressure toward low pressure.
- (4) A pattern of vibrations is set up in the air.
- (5) Tiny particles move from her mouth to someone’s ear.

The right answer is **(4)**. To answer this question, you must understand the information given.

The paragraph says that “her vocal cords vibrate and start the air vibrating.” Another way to say this is “a pattern of vibrations is set up in the air.”

Another type of **comprehension** question might be similar to this one.

**22.** Weight is defined as the product of mass and the acceleration of gravity. Weightlessness occurs when the centrifugal force created by orbiting around the Earth precisely counterbalances the gravitational force toward the Earth.

An astronaut in orbit is said to be weightless when

- (1) the acceleration due to motion balances that of gravity
- (2) the gravitational attraction of the moon balances that of the Earth
- (3) gravity vanishes due to high altitude
- (4) mass vanishes due to high velocity
- (5) mass and acceleration are very nearly equal

The right answer is (1). To answer this question, you must understand the information given. Revolving in orbit around the Earth creates a centrifugal force directed *away* from the Earth. “Weightlessness occurs when the centrifugal force . . . precisely counterbalances the gravitational force toward the Earth.”

When this motion pulling *away* from the Earth balances the pull of gravity *toward* the Earth, the astronaut becomes weightless. An important word here is *balance*.

You could be given a **comprehension** question similar to this one.

**23.** In Einstein’s famous law  $E = mc^2$ , the three symbols are represented as follows:

$E$  is energy.

$m$  is mass.

$c$  is velocity of light (a constant).

One meaning of Einstein’s law is that a small amount of matter could be converted into

- (1) exactly the same amount of matter
- (2) a very low velocity
- (3) abundant energy
- (4) bright light
- (5) a large amount of mass

The right answer is (3). To answer this question, you must understand that the law shows the relationship between mass and energy. The question says “. . . matter could be converted into. . . .” The mass (of the matter) is on one side of the equation, so the energy is on the other side. That is, the matter could be converted into energy. The equation reads like this: “Energy equals mass times the velocity of light squared (taken times itself).”

Because the velocity of light is very high, the constant  $c$  is a very large amount. Therefore, a small amount of mass could be transformed into a large amount of energy. This explains the high energy released by nuclear fission and fusion.

You may be given an **application** question similar to the one that follows.

**24.** Conservation of energy, the law that says that energy can be neither created nor destroyed, is one of the basic cornerstones of physics.

Using that principle, which of the following is the **BEST** explanation of what has happened to some of the heat energy within a room being cooled by an air conditioner?

- (1) It diminished by the reaction with oxygen.
- (2) It has condensed within the air conditioner.
- (3) It is extinguished only temporarily.
- (4) It was lost by the expansion of refrigerant gas.
- (5) It was transferred into the outside air.

The right answer is **(5)**. To answer the question, you must apply this law of physics.

Since energy is conserved, the total amount of energy is always the same, or constant. So, some of the heat energy in the room must have been pumped to the outside air.

You could be given an **analysis** question similar to this one.

**25.** Imagine that Robert is indoors admiring himself in a mirror by the light of a lamp. The light rays that generate such a good self-image have taken a complicated journey.

Which of the following is the correct sequence of travel for the light?

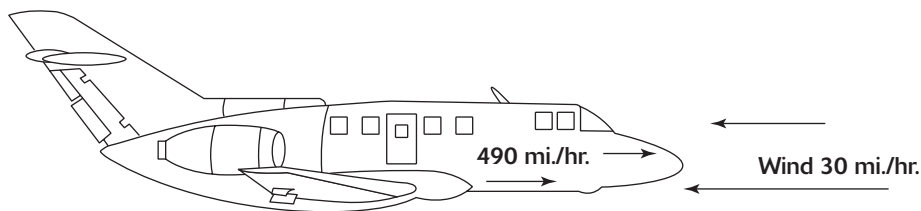
- (1) bulb-eye-mirror-face
- (2) face-bulb-mirror-eye
- (3) bulb-face-mirror-eye
- (4) mirror-bulb-face-eye
- (5) bulb-mirror-face-eye

The right answer is **(3)**. To answer this question, you must first decide where this journey begins.

The source of the light is the bulb. That light reflects from Robert's face and then is reflected again from the mirror. The light finally enters his eye. If you realize that the light begins at the bulb and ends at his eye, you can eliminate choices **(1)**, **(2)**, and **(4)**.

You could be given an **analysis** question similar to this one.

Question 26 refers to the following diagram.



- 26.** A jet airplane is flying against a stiff headwind, as shown in the preceding diagram. Inside, a cabin attendant walks toward the front of the plane. Her walking speed is 2 miles per hour (mi/hr). The airplane moves through the air at 490 mi/hr. The wind is blowing at 30 mi/hr.

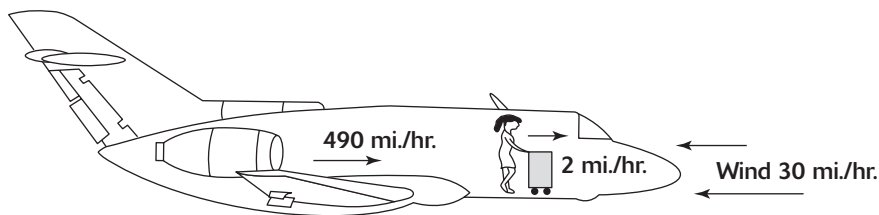
What is the velocity of the cabin attendant relative to the ground?

- (1) 458 mi/hr
- (2) 462 mi/hr
- (3) 488 mi/hr
- (4) 518 mi/hr
- (5) 522 mi/hr

The right answer is **(2)**. To find her speed, you must combine the three separate velocities.

For this calculation, you can call the plane's forward motion *positive* and the wind's motion against the plane (in the opposite direction) *negative*. The plane's velocity is +490 mi/hr. The wind velocity is -30 mi/hr. The velocity of the cabin attendant relative to the plane is +2 mi/hr, because she is walking forward. Combining all three numbers, you get

$$(+490) + (-30) + (+2) = (+460) + (+2) = 462 \text{ mi/hr}$$



You might be given an **evaluation** question similar to this one.

- 27.** The amount of energy in food is measured in calories, as are forms of energy. To lose weight, a person's energy use must be greater than his or her energy consumption. Which of the following activities would enable a person to lose weight?
- A. eating smaller portions of usual foods
  - B. eating nutritious foods high in energy
  - C. exercising somewhat more than usual
- (1) C only
  - (2) A and B only
  - (3) A and C only
  - (4) B and C only
  - (5) A, B, and C

The right answer is **(3)**. Eating smaller portions would *reduce* energy consumption, so you can eliminate **(1)** and **(4)** because they do not contain **A**. Eating high-energy foods would *increase* the intake of energy, so you can eliminate **(2)** and **(5)** because they have **B** in their answers. Energy *use* could be *increased* by exercising more than usual; therefore, **C** is true. The activities that enable a person to lose weight are **A** and **C**.

## Section III: Chemistry Questions

Questions 28 and 29 refer to the following information.

The three active ingredients in baking powder are sodium bicarbonate, sodium aluminum sulfate, and tartaric acid. The sodium bicarbonate can react with either of the other ingredients to yield gas bubbles, which cause dough to swell, or rise.

You could be given a **comprehension** question similar to this one.

- 28.** According to the paragraph, which of the following ingredients **MUST** be present for gas bubbles to occur?
- A. sodium bicarbonate
  - B. sodium aluminum sulfate
  - C. tartaric acid
- (1) A only
  - (2) B only
  - (3) C only
  - (4) B and C only
  - (5) A, B, and C

The right answer is **(1)**. To answer this question, you must understand the information given.

Because the paragraph says that sodium bicarbonate can react with *either* of the other ingredients to yield gas bubbles, the sodium bicarbonate *must* be present. Either sodium aluminum sulfate or tartaric acid *could* be present.

An **application** question similar to the one below could be next.

**29.** Considering the preceding information, why doesn't the chemical reaction occur in the baking powder can rather than in the dough?

- (1) Any reaction needs some time to proceed to completion.
- (2) The can protects the ingredients from contact with the air.
- (3) Gas expands in an open baking dish, not in a closed can.
- (4) The ingredients require moisture to initiate the reaction.
- (5) Tartaric acid in the baking powder is the main catalyst for the reaction.

The right answer is **(4)**. To answer this question, you must apply some knowledge and reasoning.

The moisture in the dough allows the reaction to begin. The chemicals must be in the solution to come into close enough contact to react.

You might be given an **application** question similar to this one.

**30.** One of the ideas of the molecular theory is that molecules are always moving.

Which of the following would **BEST** demonstrate this idea?

- (1) A spoonful of sugar is added to a cup of cocoa, and the cocoa becomes sweet in all parts of the cup.
- (2) A small stone is dropped into a glass of water and falls straight to the bottom.
- (3) An ice cube is placed in a cold container and melts very slowly.
- (4) A cup of tea is completely full, yet a tablespoon of sugar can be added and the cup does not overflow.
- (5) A drop of oil is added to a pan of water, and the oil stays together and floats on top.

The right answer is **(1)**. To answer this question, you must apply this idea to a *different situation*.

If the sugar is added to the cocoa, it is obviously added to one spot. The movement of the molecules helps distribute it to the rest of the cup.

You could be given an **analysis** question similar to this one.

- 31.** An electrically neutral atom of neon has 10 protons and 10 neutrons in its nucleus, surrounded by 10 electrons. Each proton has a charge of +1, and each electron has a charge of -1.

If an electrical current through a lighting fixture changes the number of electrons to create neon atoms with charges of +2, how many electrons surround each neon nucleus?

- (1) 2
- (2) 8
- (3) 10
- (4) 11
- (5) 12

The right answer is **(2)**. Each neon atom with a charge of +2 must have 10 protons and 8 electrons.

Do the math this way:  $10(+1) + 8(-1) = +2$ . Because the electrons are on the outside of each atom, the number of electrons can be changed fairly easily.

You might be given an **evaluation** question similar to this one.

- 32.** Pure nitrogen is obtained commercially by first liquefying air, which is 78% nitrogen. This liquefying can be accomplished by changing either the temperature or the pressure, or both.

Which of the following would be the **BEST** way to condense air to a liquid?

- (1) lowering the temperature very quickly
- (2) lowering the pressure very quickly
- (3) lowering the temperature while raising the pressure
- (4) lowering the pressure while leaving the temperature constant
- (5) raising the temperature

The right answer is **(3)**. Lowering the temperature can change a gas into a liquid. However, raising the pressure leads to the same result, because it forces the molecules closer together.

The best procedure would be to lower the temperature of air while you increase the pressure.

You could be given an **evaluation** question similar to the question that follows.

**33.** When air comes in contact with wet iron, the oxygen in the air combines with the iron to form iron oxide, or rust. In trying to stop the rusting process, chemists look for something to keep the oxygen in the air from touching the iron. This material, however, could not combine with or damage the iron. Paint is most commonly used to stop rusting, but sometimes using paint is not practical. For example, many tools should not be painted.

Which of the following materials would be **BEST** to stop the rusting of tools?

- (1) baking powder
- (2) oil
- (3) alcohol
- (4) window cleaner
- (5) salt water

The right answer is **(2)**. Oil acts in much the same way as paint to prevent chemical changes in iron. Wiping tools with an oily rag is a common practice.

You may be given an **evaluation** question similar to this one.

**34.** Some boxes and bottles have labels that read: Keep in a cool, dry place. Do not open near flame. Keep away from excessive heat. Do not expose to light.

Which of the following is the **BEST** explanation for the use of these labels?

- (1) These warnings tell you that undesirable chemical changes might take place if the instructions are not followed.
- (2) These warnings notify you of the proper disposal methods for these materials.
- (3) These labels warn you of the danger of these materials to small children.
- (4) These labels have little value but are required by law to be placed on certain containers.
- (5) These warnings are included to make sure the user is properly informed of the correct uses of these materials.

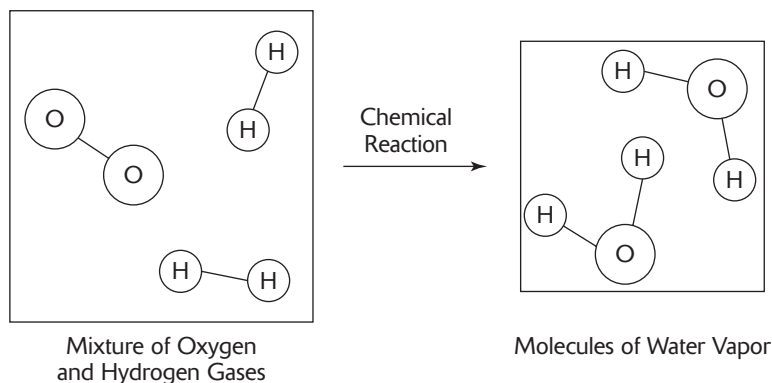
The right answer is **(1)**. Excessive heat, dampness, or exposure to light or flame might cause the materials to spoil or react in an undesirable and sometimes dangerous way.

Notice that the labels mentioned do not discuss the *uses* of the materials.



Questions 35 and 36 refer to the following information and diagram.

Circles labeled H and O represent hydrogen and oxygen atoms, respectively, bonded into molecules by straight lines between them. The larger box indicates a greater volume than the smaller box.



You could be given an **analysis** question similar to this one.

- 35.** In the diagram, the relative sizes of the boxes illustrate the rule that the volume of a gas is proportional to the
- (1) number of atoms
  - (2) number of chemical elements
  - (3) number of molecules
  - (4) pressure
  - (5) temperature

The right answer is **(3)**. The number of *atoms* and *elements* in each box is the same. However, the larger box has 50% more *molecules* (3 shown) than the smaller box (2 shown).

So, the diagram illustrates the rule that the *volume* of a gas is directly proportional to the *number of molecules*. The nature of the molecules does not make any difference in the volume. The diagram gives no information about pressure or temperature.

You could be given a **comprehension** question similar to this one.

- 36.** The diagram shows that molecules of oxygen ( $O_2$ ) and hydrogen ( $H_2$ ) can react to yield molecules of water vapor ( $H_2O$ ).
- How would you describe the essence of this chemical reaction?
- (1) a change in the bonding of atoms
  - (2) a combination of small molecules into larger atoms
  - (3) a splitting of molecules into separate atoms
  - (4) a splitting of the atomic nuclei
  - (5) a doubling in size of the hydrogen atom

The right answer is **(1)**. The reaction is primarily a change in the bonding of atoms.

The bonds within the molecules on the left side are broken, and new bonds between hydrogen and oxygen atoms appear on the right side.

## Section IV: Earth and Space Science Questions

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You could be given a **comprehension** question similar to this one.

- 37.** The gravitational force between two objects is determined by the amount of matter in the objects and the distance between them. Tides in the ocean are an example of the pull on the Earth and its oceans. That gravitational force is from a large object.

Which object is the **MOST LIKELY** source of this gravitational force?

- (1) a coastal mountain range
- (2) the nearest continent
- (3) a shallow earthquake
- (4) the Earth's moon
- (5) the sun

The right answer is **(4)**. The moon's gravitational attraction produces the tides.

When the Earth is nearest to its moon, the ocean surface is pulled upward by several feet. The influence of the larger sun is less important because the sun is so much farther away than is the moon.

You might be given an **application** question similar to this one.

- 38.** *Corrasion* is defined as wind erosion. Corrasion is limited by vegetation (plant cover), snow cover, high rainfall, or lack of wind.

In which of the following sites would you expect the **MOST** corrasion?

- (1) a desert basin
- (2) a mountain range
- (3) a prairie grassland
- (4) a sheltered valley
- (5) a tropical jungle

The right answer is **(1)**. The desert basin would suffer the most erosion by wind.

The absence of plant cover and abundance of loose material permit much corrasion. Sand-sized material that is eroded accumulates downwind as dunes.

You could be given an **application** question similar to this one.

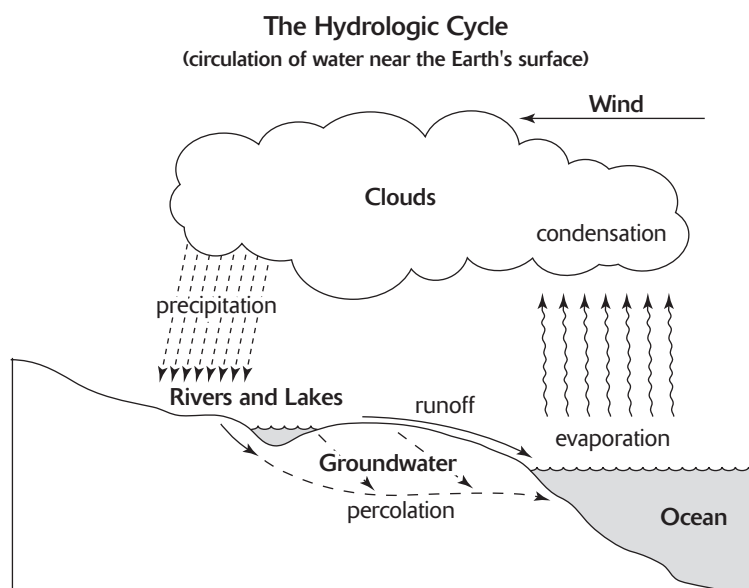
**39.** An igneous rock is produced by the solidification of a melted rock. The molten rock could cool and become solid either deep within the Earth or at the Earth's surface.

Which of the following processes yields an igneous rock?

- (1) the accumulation of coral reef
- (2) the compaction and burial of plant remains
- (3) the buildup of deposits along a beach
- (4) the eruption of a volcano
- (5) the growth of a stalactite

The right answer is (4). The lava erupted by a volcano is molten rock material at a temperature of about 1200° Celsius. So, all volcanic rocks are classified as igneous. None of the other choices involves melted rock.

*Question 40 refers to the following diagram.*



You might be given an **analysis** question similar to this one.

**40.** During the water, or hydrologic, cycle, at which stage would the water be the cleanest, or purest?

- (1) cloud
- (2) groundwater
- (3) lake
- (4) ocean
- (5) river

The right answer is **(1)**. The purest water is in the clouds.

That water comes from the evaporation of seawater. During evaporation, all dissolved contaminants are left behind in the oceans. The oceans are salty because of evaporation.

You could be given an **evaluation** question similar to this one.

- 41.** The Earth's moon has no water or air, yet its surface shows rocks and other interesting features.

Which of the following processes would a scientist consider as the **MOST** important in forming the moon's surface?

- A. glacier activity
- B. meteorite impact
- C. volcanic activity
- D. wind erosion

- (1)** A and B only
- (2)** A and C only
- (3)** B and C only
- (4)** B and D only
- (5)** C and D only

The right answer is **(3)**. To answer this question, you need to analyze and evaluate the information given.

Because there is no water or air on the moon, glacier activity (**A**) and wind erosion (**D**) are *not* possible. So, you can eliminate choices **(1)**, **(2)**, **(4)**, and **(5)** because they include answer **A** or answer **D**. The only choice left is **(3)**. Meteorite impact (**B**) and volcanic activity (**C**) had to form the moon's surface.

# Language Arts, Reading

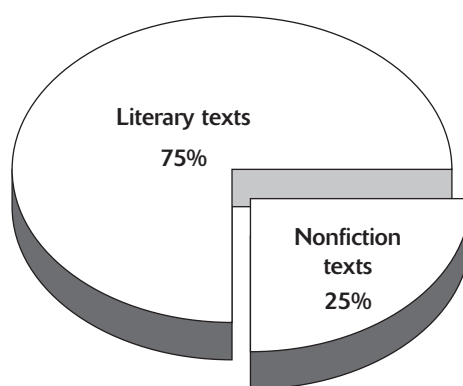
## What to Expect

The Language Arts, Reading Test is 1 hour and 5 minutes long and contains 40 multiple-choice questions.

- ⇒ Expect questions that will test how well you understand selections from different types of literature — such as fiction, poetry, and drama — and from nonfiction — such as nonfiction prose and documents commonly found in the workplace or community.
- ⇒ Expect reading selections to be between 200 and 400 words long.
- ⇒ Expect each sentence to be followed by four to eight questions.
- ⇒ Expect a brief, easy-to-read question (purpose question) before each selection to help you in understanding the reading.
- ⇒ Expect to be able to answer the questions based on the reading. (A previous knowledge of literary works is not necessary.)

## What You Should Know

The Language Arts, Reading Test will use selections from the following areas:



The areas tested by the Language Arts, Reading Test

You should know how to read, understand, and answer questions from the following areas (previous knowledge of these types of literature is not necessary):

### LITERARY TEXTS (75%)

- **Fiction** selections will be from fiction before 1920, fiction from 1920 to 1960, and fiction after 1960. The selections will be parts of short stories or novels.
- **Poetry** will include short poems or parts of longer poems.
- **Drama** will include parts of plays.
- All **literary selections** will be written by well-known and respected writers.

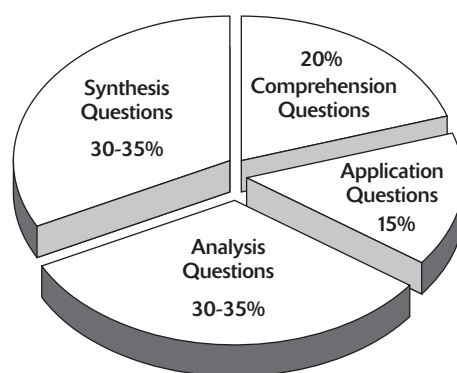
## NONFICTION TEXTS (25%)

This section will include selections from two of the three following areas.

- **Nonfiction prose** will include short essays or speeches, or parts of longer nonfiction works.
- **Reviews** will include critical reviews of plays, books, films, music, or other forms of art.
- **Workplace and community documents** will include such documents as guidelines for employee behavior, excerpts from manuals, legal documents, and so on.

## What to Look For: Kinds of Questions

The GED Language Arts, Reading Test will test a higher level of thinking skills. You will not be asked to simply repeat or remember information. The exam questions are grouped as follows:



The question types on the Language Arts, Reading Test

- **Comprehension Questions (20%):** You should be able to understand the meaning and purpose of the reading. The comprehension questions emphasize understanding.
  - What does the reading **state**?
  - What does the reading **suggest**?
- **Analysis Questions (30%–35%):** You should be able to examine the style and structure of the passage. Analysis questions will emphasize
  - What is the **tone** of the passage?
  - What **conclusions** can be **drawn**?
  - What kind of **language** is **used**?
  - How are **details used** or **presented**?
- **Application Questions (15%):** You should be able to use information and ideas from a passage in a different situation. Application questions will emphasize
  - Can you **use stated information** and **ideas** in a new setting?
  - Can you **use suggested information** in a new setting?

- **Synthesis Questions (30%–35%):** You should be able to integrate information from multiple sources or to integrate information from many parts of a single selection. Synthesis questions will emphasize
  - Can you **interpret the overall tone, point of view, style, or purpose** of a selection?
  - How is the passage **organized**?
  - Can you **make connections** among parts of the selection?
  - Can you **integrate information** from outside the passage with elements within the passage? (In this type of question, additional information about the text or author is given in the question, and you are asked to synthesize this new information with information obtained from the selection itself.)

## About the Directions

Following are the directions you'll find in the Language Arts, Reading Test. Become very familiar with these directions *now* so that you will be comfortable with them when you take the actual test. The directions you'll see on the actual test will be wider on the page. Here, though, room has been left for the boxes you see on the right and the left. Read the following directions straight through, and then carefully read the information in the boxes. It points out and explains important points in the directions.

### LANGUAGE ARTS, READING

#### Tests of General Educational Development

#### Directions

The Language Arts, Reading Test consists of excerpts from fiction and nonfiction. Each excerpt is followed by multiple-choice questions about the reading material.

Read each excerpt first and then answer the questions following it. Refer back to the reading material as often as necessary in answering the questions.

Each excerpt is preceded by a "purpose question." The purpose question gives a reason for reading the material. Use these purpose questions to help focus your reading. You are not required to answer these purpose questions. They are given only to help you concentrate on the ideas presented in the reading material.

Questions are about reading materials; you don't need outside information

Look back at the information as often as you need to

All the information you need will be in the reading material

All questions have five choices

The purpose question is only to let you know what to look for; don't answer the purpose question

**Spend no more than about 1½ minutes per question**

**Don't get stuck on any question**

You will have 65 minutes to answer the 40 questions in this booklet. Work carefully, but do not spend too much time on any one question. Be sure you answer every question.

**No penalty for guessing so guess if you have to, but don't leave any questions blank**

**Each question is worth the same**

Do not mark in the test booklet. Record your answers on the separate answer sheet provided. Be sure all requested information is properly recorded on the answer sheet.

To record your answers, mark the numbered space on the answer sheet that corresponds to the question in the test booklet.

**Mark your answers carefully on the answer sheet**

FOR EXAMPLE:

It was Susan's dream machine. The metallic blue paint gleamed, and the sporty wheels were highly polished. Under the hood, the engine was no less carefully cleaned. Inside, flashy lights illuminated the instruments on the dashboard, and the seats were covered by rich leather upholstery.

The subject ("It") of this excerpt is most likely

- (1) an airplane
- (2) a stereo system
- (3) an automobile
- (4) a boat
- (5) a motorcycle

The correct answer is "an automobile"; therefore, answer space 3 would be marked on the answer sheet.

**Notice that this question refers to a reading; almost all questions follow this format**



**Mark only  
one answer**

Do not rest the point of your pencil on the answer sheet while you are considering your answer. Make no stray or unnecessary marks. If you change an answer, erase your first mark completely. Mark only one answer space for each question; multiple answers will be scored as incorrect. Do not fold or crease your answer sheet. All test materials must be returned to the test administrator.

**Do not make  
any extra  
marks on  
your answer  
sheet**

## What You Should Do

- ☐ Pay special attention to the purpose question
- ☐ Sample a few questions before reading each passage.
- ☐ Answer each question based only on information in the passage.
- ☐ Eliminate answer choices that are not relevant (have nothing to do with the reading).
- ☐ Eliminate choices that disagree with something in the passage.

The following sections will use examples to carefully explain the question types, show you what to look for, and point out what you should do.

## Section I: Nonfiction Texts

*You could be given the following type of reading.*

*Questions 1 through 8 refer to the following speech.*

### WHAT IS GOOD ADVICE FOR YOUNG PEOPLE?

- Being told I would be expected to talk here, I inquired what sort of talk I ought to make. They said it should be something suitable to youth—something didactic, instructive, or something in the nature of good advice. Very well. I have a few things in my mind which I have often longed to say for the instruction of the young; for it is in one's tender early years
- (5) that such things will best take root and be most enduring and most valuable. First, then, I will say to you, my young friends—and I say it beseeching, urgently—

- Always obey your parents, when they are present. This is the best policy in the long run, because if you don't they will make you. Most parents think they know better than you do, and you can generally make more by humoring that superstition than you can by acting on
- (10) your own better judgment.

- Be respectful to your superiors, if you have any, also to strangers, and sometimes to others. If a person offend you, and you are in doubt as to whether it was intentional or not, do not resort to extreme measures, simply watch your chance and hit him with a brick. That will be sufficient. If you shall find that he had not intended any offense, come out frankly
- (15) and confess yourself in the wrong when you struck him; acknowledge it like a man and say you didn't mean to. Yes, always avoid violence in this age of charity and kindness, the time has gone by for such things. Leave dynamite to the low and unrefined.

- Go to bed early, get up early—this is wise. Some authorities say get up with the sun; some others say get up with one thing, some with another. But a lark is really the best thing
- (20) to get up with. It gives you a splendid reputation with everybody to know that you get up

with the lark; and if you get the right kind of a lark, and work at him right, you can easily train him to get up at half past nine, every time — it is no trick at all.

- (25) Now as to the matter of lying. You want to be very careful about lying; otherwise you are nearly sure to get caught. Once caught, you can never again be, in the eyes of the good and the pure, what you were before. Many a young person has injured himself permanently through a single clumsy and ill-finished lie, the result of carelessness born of incomplete training. Some authorities hold that the young ought not lie at all. That, of course, is putting it rather stronger than necessary; still, while I cannot go quite so far as that, I do maintain, and I believe I am right, that the young ought to be temperate in the use of this great art —
- (30) until practice and experience shall give them that confidence, elegance, and precision which alone can make the accomplishment graceful and profitable.

**Before reading further, pay attention to the purpose question. This is the question at the beginning of the passage, which is, in this case, “What Is Good Advice For Young People?” Every reading selection will begin with a question of this kind, to give you an idea of what the selection will be about, and to excite your curiosity, so that you will read with interest and attention.**

Next, **sample the questions.** Sampling some of the questions lets you know what to look for when you read the passage. Remember, on this GED Test you will see four types of questions:

- **Comprehension Questions:** These questions ask you to *understand the meaning of information* in the reading. Sometimes the reading states this information in a straightforward, *direct* way, and sometimes the reading only *suggests* the information.
- **Analysis Questions:** These questions ask you to *understand and analyze how language or ideas are used* in the reading. They may ask about the author’s choice of words or the structure of the sentence.
- **Application Questions:** These questions ask you to *apply the information in the reading* to a situation or example *not mentioned* in the reading.
- **Synthesis Questions:** These questions ask you to *interpret or integrate information*.

*With these question types in mind, you can sample the questions based on the passage above.*

1. The speaker’s audience most likely includes which of the following?

This is an **application** question. This question asks you to *apply information from the reading to the question of audience*, the people being spoken to, even though the audience is not specifically mentioned in the speech. As you read, you should pay attention to any information that helps you determine the speaker’s (or writer’s) audience.

2. Which of the following conclusions is probably true about the speaker’s advice?

This is an **analysis** question. You are asked to *analyze the speaker’s advice and draw a conclusion* about it.

3. When the author says “that superstition” (line 9), he is suggesting which of the following?

This is a **comprehension** question. You are asked to *understand the suggested meaning* of a particular part of the reading. As you read, you should pay special attention to the phrase (*that superstition*) mentioned in this question.

4. By “the accomplishment” (line 31), the speaker means which of the following?

This is a **comprehension** question. You are asked to *understand the meaning* of “the accomplishment” as used in this passage.

5. When the speaker says that “the time has gone by” for violence (line 17), he suggests which of the following?

This is a **comprehension** question. You are asked to *understand the suggested meaning of the information in line 17*.

6. When the speaker advises youth to “always obey your parents, when they are present,” he suggests which of the following?

This is a **comprehension** question. What is the speaker *suggesting*?

7. We cannot take the author’s advice in lines 18–21 seriously because of which of the following?

This is an **analysis** question. You are asked to *analyze the tone* of the author’s advice.

8. Which of the following responses would the speaker probably expect from the audience?

This is an **application** question. You are asked to *apply information* from the passage to *predict a response* from the audience.

**Now that you have sampled some of the questions, read the passage carefully. You should notice the parts that are important to remember and understand. These are the parts of the reading that the questions refer to.**

**After reading the selection, you must answer questions based only on the information in the passage. You can eliminate incorrect answers that**

- Have nothing to do with the reading or are not mentioned
- Contradict or disagree with the information in the reading

*Consider the following questions, answers, and explanations based on the passage above.*

You may be given an **application** question similar to the one that follows.

1. The speaker's audience most likely includes which of the following?

- (1) young people
- (2) parents
- (3) school officials
- (4) law enforcement officers
- (5) families

The right answer is (1). In the first paragraph, the speaker says that his talk should be “something suitable to youth”; so we may assume that the author's audience includes young people.

None of the other choices is mentioned as necessarily part of the speaker's audience.

An **analysis** question such as this could follow.

2. Which of the following conclusions is probably true about the speaker's advice?

- (1) It is just the sort of advice most parents give to their children.
- (2) It should not be taken seriously.
- (3) It consists of dangerous lies.
- (4) It is the same advice that the speaker followed as a youth.
- (5) It will offend anyone who hears it.

The right answer is (2). Choice (1) is wrong because advice such as “hit him with a brick,” most likely does not agree with the “sort of advice most parents give their children.” Choice (3) contradicts the humorous tone of the passage; the speaker does not seem to be a dangerous liar. Choice (4) is not mentioned at all. The author does not tell us whether he followed his own advice or not. The humorous tone of the passage does not agree with the conclusion that it is offensive, choice (5).

Choice (2) is best because many of the speaker's statements seem meant to be taken as jokes.

A **comprehension** question similar to this could be given.

3. When the author says “that superstition” (line 9), he is suggesting which of the following?

- (1) Parents are always smarter than their children.
- (2) Parents are superstitious about most things.
- (3) Superstitious children will be sure to obey their parents.
- (4) The belief that parents know better than their children is a false one.
- (5) Most superstitions are humorous.

The right answer is (4). A superstition is a false belief. When the speaker says that “parents think they know better than you do” is a “superstition,” he means it is false belief.

Each of the other choices has nothing to do with the information in the reading.

You may be given a **comprehension** question similar to the following type.

**4.** By “the accomplishment” (line 31), the speaker means which of the following?

- (1) growing up
- (2) becoming one of the “good and pure”
- (3) lying
- (4) taking all of the author’s advice
- (5) becoming as wise as he is

The right answer is (3). The speaker disagrees with those who say that “the young ought not to lie at all” (line 27) and goes on to say that they should get “practice and experience” (lines 29–30) to make “the accomplishment [lying] graceful and profitable.

A **comprehension** question similar to the next one could follow.

**5.** When the speaker says that “the time has gone by” for violence (line 17), he suggests which of the following?

- (1) The past was a more violent time.
- (2) The future will be a more violent time.
- (3) Charity and kindness are things of the past.
- (4) Using dynamite is a thing of the past.
- (5) No one avoids violence anymore.

The right answer is (1). If the time has gone by for violence, then the time of violence was in the past.

An **analysis** question similar to the next one may follow.

**6.** When the speaker advises youth to “always obey your parents, when they are present,” he suggests which of the following?

- (1) He never obeyed his own parents.
- (2) He is concerned only with the parents of others.
- (3) When parents are not present, youth need not obey them.
- (4) Parents do not expect to be obeyed unless they are present.
- (5) The presence of parents is something that annoys young people.

The right answer is (3). With this piece of advice, the author suggests that youth should obey their parents *only* when the parents are present.

Another **analysis** question, similar to this, may be given.

- 7.** We cannot take the author’s advice in lines 19–22 seriously because of which of the following?
- (1) Training a lark to wake one up at 9:30 is probably not possible.
  - (2) Larks are not available everywhere.
  - (3) The only ones who get up with the larks are other larks.
  - (4) There are some mornings when one will not wish to get up at 9:30.
  - (5) Larks are too wise to allow themselves to be trained.

The right answer is **(1)**. The idea of training a lark to wake one up is obviously not reasonable.

An **application** question similar to this may be given.

- 8.** Which of the following responses would the speaker probably expect from the audience?
- (1) hostility
  - (2) agreement
  - (3) boredom
  - (4) laughter
  - (5) insults

The right answer is **(4)**. Since the speaker’s talk consists mainly of humorous statements, he would expect laughter from the audience.

Another type of nonfiction passage you could be given is a document such as the one below.

*Questions 1 through 5 refer to the following excerpt from a document.*

### **HOW ARE HOSPITALIZATION BENEFITS ASSURED, AND HOW IS DUPLICATE COVERAGE HANDLED?**

#### Sterling Health Plan: Hospitalization and Duplicate Coverage Hospitalization

If your medical condition or diagnosis requires hospitalization, you may choose a facility that is part of the Sterling Health Plan network or, at a higher cost, any other facility.

- (5) Whatever facility you choose, your admission must be approved in advance by Sterling Health. It is your responsibility to ensure that you have received the necessary authorization, called “precertification,” for any hospital stay. Precertification is arranged as follows:

Call Customer Service five days before a scheduled admission. If you are unable to call five days in advance, call as soon as you know you will need hospital care. If the admission is for mental health or substance abuse, you must speak with a representative from the

- (10) Mental Health/Substance Abuse program.

Identify yourself as a member of the Sterling Health Plan and state your member identification number (found on your health-care ID card). Specify that you are calling to request precertification.

- (15) Present the facts regarding your hospitalization, including your doctor’s full name, address, and phone number. A health care professional will review your request promptly and notify your doctor of the approved length of stay.

If Sterling has questions or does not approve your stay, a representative will discuss the details with your doctor and reach an agreement regarding appropriate, covered hospital services.

- (20) If your stay is not precertified, your benefits will be reduced or denied. Your precertification covers only the approved length of stay. Hospitalizations beyond the approved length may not be covered or will be covered at a reduced rate. If medical complications require a longer stay, outpatient care or other types of continuing care, you will be covered provided your doctor authorizes it through Sterling Health.

- (25) If your hospitalization is for a maternity stay, no authorization is required for a 48-hour stay (96 hours if a cesarean section delivery is required). Longer stays must be authorized by Sterling Health.

#### Duplicate Coverage

- (30) Duplicate coverage occurs when an individual is eligible to receive benefits for a covered expense under more than one health plan or insurance policy — for example, when you and your spouse each have your own health care plans and cover each other or your children as dependents under both plans. Duplicate coverage can also occur when you are injured and your expenses are covered by your health care plan as well as a homeowner’s or automobile insurance policy. When duplicate coverage does occur, a process called Coordination of
- (35) Benefits determines which insurance plan pays first (the primary carrier) and which is designated the secondary carrier, paying any remaining balance up to but not exceeding the total charges for the health care services.

One question may be a **comprehension** question, similar to the following.

1. “Precertification” (line 6) refers to which of the following?

- (1) determination of a primary carrier
- (2) Sterling’s authorization of a hospital stay
- (3) admittance to a Sterling in-network hospital
- (4) Sterling’s coordination of benefits procedure
- (5) communication between a physician and a Sterling health-care professional

The best answer is (2). Precertification is specifically defined as authorization in lines 5 and 6.



A **comprehension** question similar to this could follow.

- 2.** Under which of the following circumstances would your hospitalization benefits most likely be reduced?
- (1) You leave the hospital before your doctor authorizes your release.
  - (2) Sudden medical complications require a longer stay than initially authorized.
  - (3) Although your hospital is part of the Sterling network, your surgeon is not.
  - (4) You did not call Sterling for authorization of a hospital stay.
  - (5) You are entering the hospital for a substance abuse problem.

The best answer is **(4)**. Precertification is required if you want to receive full benefits. See lines 21–24.

You may be given an **application** question similar to the following type.

- 3.** While installing a satellite dish on your roof, you fall and injure your back. Medical care is covered by both your homeowner's insurance policy and your Sterling medical plan. Which of the following will occur?
- (1) The homeowner's policy will cover the medical care 100 percent.
  - (2) Sterling Health will cover the medical care 100 percent.
  - (3) The cost of medical treatment will be split 50-50 by Sterling and the homeowner's policy.
  - (4) Sterling Health (the primary carrier) will pay for the initial medical treatment, and the homeowner's policy (the secondary carrier) will cover follow-up visits.
  - (5) Whichever plan is designated the primary carrier will pay first, and the other plan will pay the remaining balance.

The best answer is **(5)**. You are asked to apply the information in lines 35–37 to a specific situation.

One of the questions may be an **analysis** question.

- 4.** If you feel you need a longer hospital stay than has been precertified, which of the following should you do?
- (1) Discuss your situation with your doctor and ask the doctor to contact Sterling for authorization.
  - (2) Contact Sterling and present your reasons for needing a longer stay.
  - (3) Negotiate a reduced benefit with Sterling.
  - (4) Request a transfer to another Sterling in-network facility and apply for another precertification.
  - (5) Arrange with your doctor for outpatient treatment that will be covered by Sterling.



The best answer is **(1)**. Your doctor, not you, should contact Sterling to receive authorization for an extended stay.

A **synthesis** question similar to this could follow.

- 5.** Elsewhere in the explanation of the health plan is a statement that only 30 days of hospitalization for substance abuse is covered by Sterling. What effect does this have on the need for precertification?
- (1)** Precertification may be authorized only if the patient has a history of substance abuse.
  - (2)** A representative of the Sterling Mental Health/Substance Abuse program will authorize out-patient treatment only.
  - (3)** The length of time hospitalization is covered by the plan does not affect the need for precertification.
  - (4)** Precertification is not required for hospitalization related to mental health or substance abuse.
  - (5)** A procedure other than precertification is required for substance abuse hospitalization.

The best answer is **(3)**. The extent of coverage in the plan is a separate issue from the need for precertification. Precertification is required for all hospitalizations except maternity.

**Some reminders:**

- **Pay special attention to the purpose questions.**
- **Sample a few questions before reading each passage.**
- **Answer each question based only on information in the reading.**
- **Eliminate answer choices that are not relevant (have nothing to do with the reading).**
- **Eliminate choices that disagree with something in the reading.**

## Section II: Literary Texts

*You could be given the following type of reading:*

*Questions 1 through 7 refer to the following excerpt from a novel.*

### WHAT KIND OF MAN IS MR. PAUL DOMBEY?

Dombey sat in the corner of the darkened room in the great arm-chair by the bedside and Son lay tucked up warm in a little basket bedstead, carefully disposed on a low settee immediately in front of the fire and close to it, as if his constitution were analogous to that of a muffin, and it was essential to toast him brown while he was very new.

- (5) Dombey was about eight-and-forty years of age. Son about eight-and-forty minutes. Dombey was rather bald, rather red, and though a handsome well-made man, too stern and pompous in appearance to be prepossessing. Son was very bald, and very red, and (of course) an undeniably fine infant.

- (10) Dombey, exulting in the long-looked-for event, jingled and jingled the heavy gold watch-chain that depended from below his trim blue coat, whereof the buttons sparkled phosphorescently in the feeble rays of the distant fire.

“The house will once again, Mrs. Dombey,” said Mr. Dombey, “be not only in name but in fact Dombey and Son; Dom-bey and Son!”

- (15) The words had such a softening influence that he appended a term of endearment to Mrs. Dombey’s name (though not without some hesitation, being a man little used to that form of address) and said, “Mrs. Dombey, my — my dear.”

A transient flush of faint surprise overspread the sick lady’s face as she raised her eyes towards him.

“He will be christened Paul, my — Mrs. Dombey — of course.”

- (20) She feebly echoed, “Of course.”

“His father’s name, Mrs. Dombey, and his grandfather’s!” And again he said “Dom-bey and Son,” in exactly the same tone as before.

- (25) Those three words conveyed the one idea of Mr. Dombey’s life. The earth was made for Dombey and Son to trade in, and the sun and moon were made to give them light. Rivers and seas were formed to float their ships; rainbows gave them promise of fair weather; winds blew for or against their enterprises; stars and planets circled in their orbits to preserve inviolate a system of which they were the centre.

A **comprehension** question similar to this could be given.

1. Mrs. Dombey speaks “feebly” (line 20) probably because of which of the following?

- (1) It is late at night.
- (2) She has just had a baby.
- (3) She is naturally sickly.
- (4) She cannot keep warm.
- (5) Mr. Dombey has called her “my dear.”

The right answer is (2). Mrs. Dombey has just given birth to a baby, less than an hour before this scene takes place. In line 5, the reading says that the baby is about “eight-and-forty minutes” old.

A question similar to this **comprehension** question could be given.

**2.** What is Mr. Dombey’s mood?

- (1) excellent
- (2) stoical
- (3) calm
- (4) sympathetic
- (5) depressed

The right answer is (1). We are told that Mr. Dombey is “exulting” (line 9) because of the birth of a son.

You may be given a **comprehension** question similar to the following type.

**3.** The “long-looked-for event” (line 9) is which of the following?

- (1) the coming of Christmas
- (2) Mrs. Dombey’s death
- (3) the birth of a son
- (4) the success of Dombey’s company
- (5) the success of Dombey’s son

The right answer is (3). The long-awaited event is the son’s birth. Mr. Dombey, as we are told, is 48 years old.

A **comprehension** question similar to the next one could follow.

**4.** In line 12, “the house” refers to which of the following?

- (1) Dombey’s London residence
- (2) Dombey’s country estate
- (3) A college
- (4) Mrs. Dombey’s residence
- (5) Dombey’s company

The right answer is (5). The house is the family company, called Dombey and Son. The last paragraph of the excerpt mentions that “the earth was made for Dombey and Son to trade in,” to do business in.

A **comprehension** question similar to this could be given.

**5.** In line 17, the “flush of faint surprise” is most likely caused by which of the following?

- (1) Mrs. Dombey’s fever
- (2) Mr. Dombey’s use of “my dear”
- (3) Mr. Dombey’s repetition of “Dombey and Son”
- (4) the heat of the fire
- (5) Mr. Dombey’s disappointment

The right answer is (2). Mrs. Dombey is surprised by her husband’s use of the term of endearment (*my dear*). You are told he does not usually use that “form of address.”

A **comprehension** question similar to this may follow.

**6.** What is probably the most important thing in Mr. Dombey’s life?

His

- (1) firm
- (2) wife
- (3) daughter
- (4) father
- (5) grandparents

The right answer is (1). The last paragraph says that “those three words,” Dombey and Son, are “the one idea of Dombey’s life.”

One question of the set may be similar to the following **comprehension** question.

**7.** The details of the excerpt suggest that Mr. Dombey is probably which of the following?

- (1) selfish
- (2) an affectionate husband
- (3) impoverished
- (4) generous
- (5) compassionate

The right answer is (1). We can tell from the excerpt that Dombey’s real love is for his company, not for his wife or for other people.

We can also tell from details of the excerpt (“the heavy gold watch-chain,” for example) that Dombey is not poor (impoverished).

*Here is another set.*

Questions 1 through 6 refer to the following poem.

### CAN THERE BE SOME GOOD IN DEFEAT?

- Defeat may serve as well as victory  
 To shake the soul and let the glory out.  
 When the great oak is straining in the wind,  
 The boughs drink in new beauty, and the trunk  
 (5) Sends down a deeper root on the windward side.  
 Only the soul that knows the mighty grief  
 Can know the mighty rapture. Sorrows come  
 To stretch out spaces in the heart for joy.

You may be given the following type of **comprehension** question.

- 1.** According to the poem, we should expect a person who has experienced great suffering to be which of the following?
- (1) indifferent to great joy
  - (2) indifferent to renewed sorrow
  - (3) capable of feeling great joy
  - (4) capable of controlling emotions
  - (5) especially sympathetic to the sufferings of others

The right answer is **(3)**. The idea of the poem is that great grief expands the soul making it capable of feeling greater joy.

Answers **(4)** and **(5)** may be true of life, but there is nothing at all in this poem about these ideas.

An **analysis** question such as this could be given.

- 2.** In lines 3–5, the description of the oak tree does which of the following?
- (1) reminds the reader that people are part of the natural world
  - (2) reminds the reader that people and nature are different
  - (3) suggests the consolation for grief offered in nature
  - (4) suggests a comparison between the soul and the tree
  - (5) suggests that defeat is a creation of the mind

The right answer is **(4)**. The point of lines 3–5 is to suggest a comparison between the tree and the soul. The harsh winds are like grief or defeat, but because of them the tree has deeper roots.

One of the questions given could be similar to this **analysis** question.

- 3.** The last sentence of the poem (“Sorrows come to stretch out spaces in the heart for joy”) does which of the following?
- (1) echoes the idea of lines 3–4
  - (2) presents a new idea
  - (3) makes a negative statement
  - (4) echoes the idea of lines 1–2 and 6–7
  - (5) contradicts the idea of lines 6–7

The right answer is **(4)**. The poem repeats its central idea four times. Nothing in the poem contradicts the central idea.

A **comprehension** question similar to this may be given.

- 4.** In line 5, what does the word “windward” mean?
- (1) leeward
  - (2) the direction toward which the wind blows
  - (3) the direction from which the wind blows
  - (4) easterly
  - (5) sheltered

The right answer is **(3)**. The *windward* side is the side from which the wind blows, the unsheltered side. The opposite of *windward* is *leeward*, the side toward which the wind blows, and thus, the sheltered side.

**Analysis** questions similar to these could follow.

- 5.** All of the following words or phrases in the poem are closely related in meaning **EXCEPT** which of the following?
- (1) defeat (line 1)
  - (2) straining in the wind (line 3)
  - (3) a deeper root (line 5)
  - (4) grief (line 6)
  - (5) sorrows (line 7)

**6.** All of the following words or phrases in the poem are closely related in meaning **EXCEPT** which of the following?

- (1) victory (line 1)
- (2) new beauty (line 4)
- (3) the soul (line 6)
- (4) rapture (line 7)
- (5) joy (line 8)

The right answers to questions 5 and 6 are **(3)** and **(3)**. The use of repetition in the poem is illustrated in these questions.

Words showing defeat or sorrow and words for victory or joy are used in each of the four sentences. In both questions, the **(3)** answer is out of place.





# Mathematics

## What to Expect

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The Mathematics Test is divided equally into two parts.

**Part I:** 25 questions; 45 minutes — Calculator is allowed (Casio fx-260 provided).

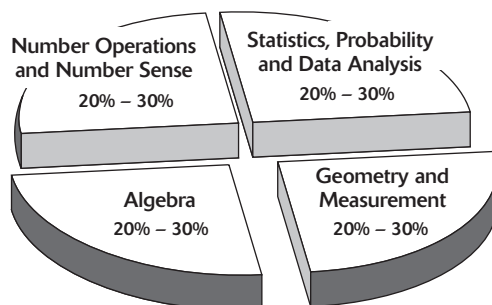
**Part II:** 25 questions; 45 minutes — No calculator is allowed.

- ⇒ Expect questions that will test how well you understand and can apply the basic concepts of arithmetic (number sense, operations, statistics, probability, and data analysis), basic algebra, and informal geometry and measurement.
- ⇒ Expect settings that are familiar in everyday life. A grocery store, a bank, a theater, a restaurant, and a sporting event would all be familiar settings.
- ⇒ Expect about two-thirds of the questions to refer to situations.
- ⇒ Expect about one-third of the questions to refer to graphs or charts.
- ⇒ Expect some questions to be in groups, or sets — that is, two to four questions that refer to the same situation, chart, or graph.
- ⇒ Expect some questions where you will have to grid in answers on an answer grid or a coordinate grid.
- ⇒ Expect a formulas page to refer to if necessary.

## What You Should Know

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The Mathematics Test contains the following areas:



You should be able to answer questions in the following areas:

### **ARITHMETIC (40%–60%)**

#### **Number Operations and Number Sense (20%–30%)**

- Use **integers, fractions, decimals, and percents** in real world situations
- **Round off, estimate, and compare** numbers
- Work with **ratios and proportions**
- **Exponents, roots, scientific notation, and appropriate operations**
- Use a **scientific calculator**

#### **Data Analysis, Statistics, and Probability (20%–30%)**

- Find **mean, mode, and median**
- Understand and use **tables, graphs, and charts**
- **Solve simple probability problems**
- **Compare and contrast different sets of data**

### **ALGEBRA (20%–30%)**

- **Solve proportions and percent problems**
- **Solve simple equations**
- **Solve linear and quadratic equations**
- **Create and evaluate algebraic expressions**
- Use algebra **symbols and formulas**
- **Analyze tables, graphs, and charts**
- **Understand basic factoring**

### **GEOMETRY AND MEASUREMENT (20%–30%)**

- **Solve problems involving common triangles, rectangles, and circles**
- **Solve problems using perpendicular and parallel lines**
- **Understand solid figures and their parts**
- Use basic **geometric properties** and the **Pythagorean theorem** to solve problems
- Use **coordinates and coordinate graphs**
- **Calculate the slope of a line and the distance between points** on a plane
- **Solve problems involving length, perimeter, area, and volume**

## What to Look For: Kinds of Questions

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The GED Mathematics Test will test application and problem-solving skills. The questions will stress your being able to apply concepts and basic skills.

Look for problems that ask you to

- Visualize
- Set up an expression or equation
- Estimate or approximate
- Do simple calculations
- Work out ratios and proportions
- Apply given formulas
- Use your basic knowledge
- Work from the answers
- Find the reasonable answer
- Decide if you have enough information or need more

## About the Directions

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Following are the directions you'll find in the Mathematics Test. Note that the directions to Parts I and II have one major difference. Become very familiar with these directions now so that you'll be comfortable with them when you take the actual test. The directions you'll see on the actual test will be wider on the page. Here, though, room has been left for the boxes you see on the right and the left. Read the following directions straight through, and then carefully read the information in the boxes. It points out and explains important points in the directions.

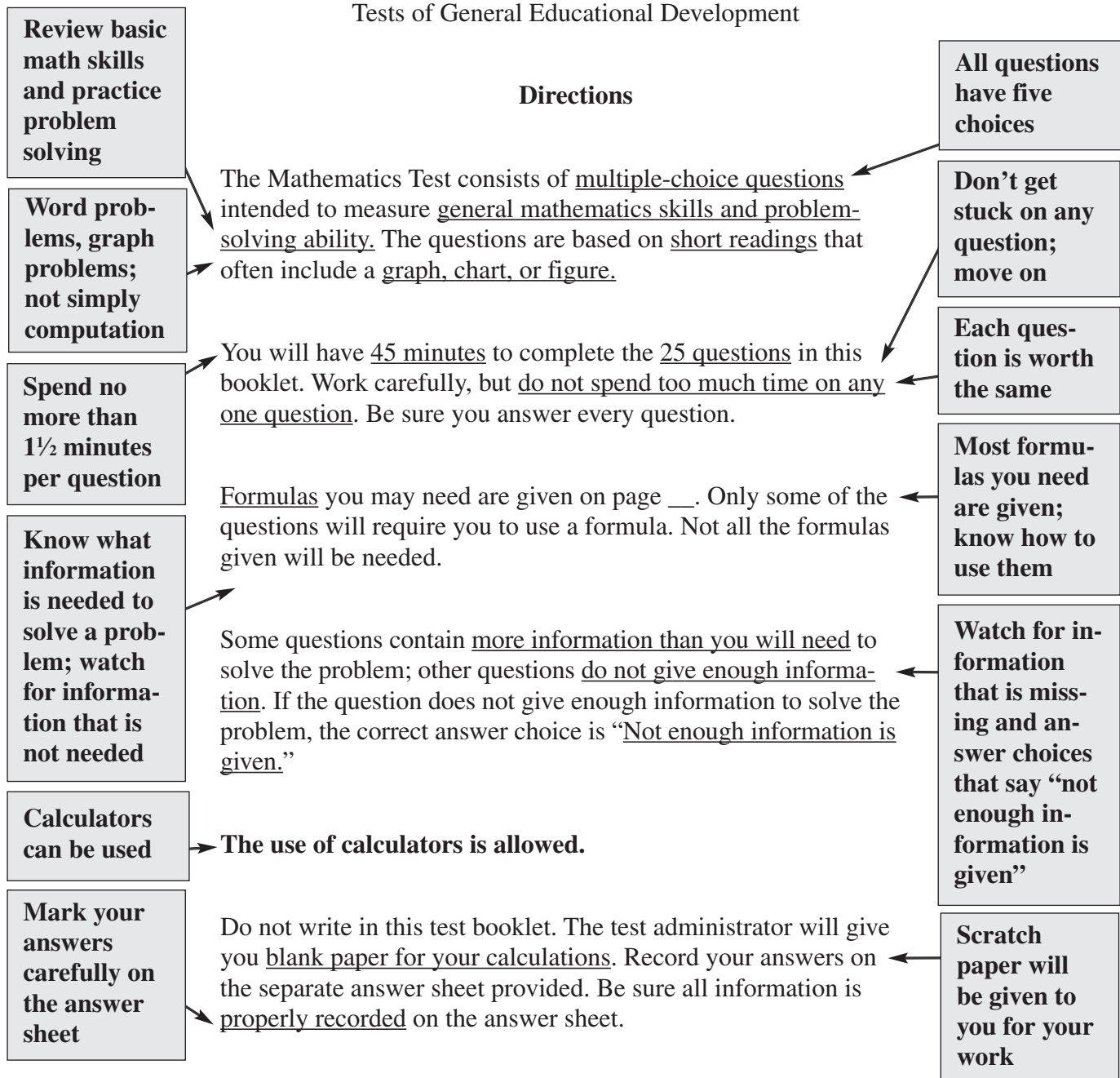
## DIRECTIONS FOR PART I AND PART II

The directions for Part I are below (on Part I, you are allowed to use a calculator). The directions for Part II follow.

### MATHEMATICS, PART I

Tests of General Educational Development

#### Directions



To record your answers, fill in the numbered circle on the answer sheet that corresponds to the answer you select for each question in the test booklet.

FOR EXAMPLE:

If a grocery bill totaling \$15.75 is paid with a \$20.00 bill, how much change should be returned?

- (1) \$5.25
- (2) \$4.75
- (3) \$4.25
- (4) \$3.75
- (5) \$3.25

The correct answer is “\$4.25”; therefore, answer space 3 would be marked on the answer sheet.

**Notice that this question requires basic skills and some problem solving ability**

**Mark only one answer**

Do not rest the point of your pencil on the answer sheet while you are considering your answer. Make no stray or unnecessary marks. If you change an answer, erase your first mark completely. Mark only one answer space for each question; multiple answers will be scored as incorrect. Do not fold or crease your answer sheet. All test materials must be returned to the test administrator.

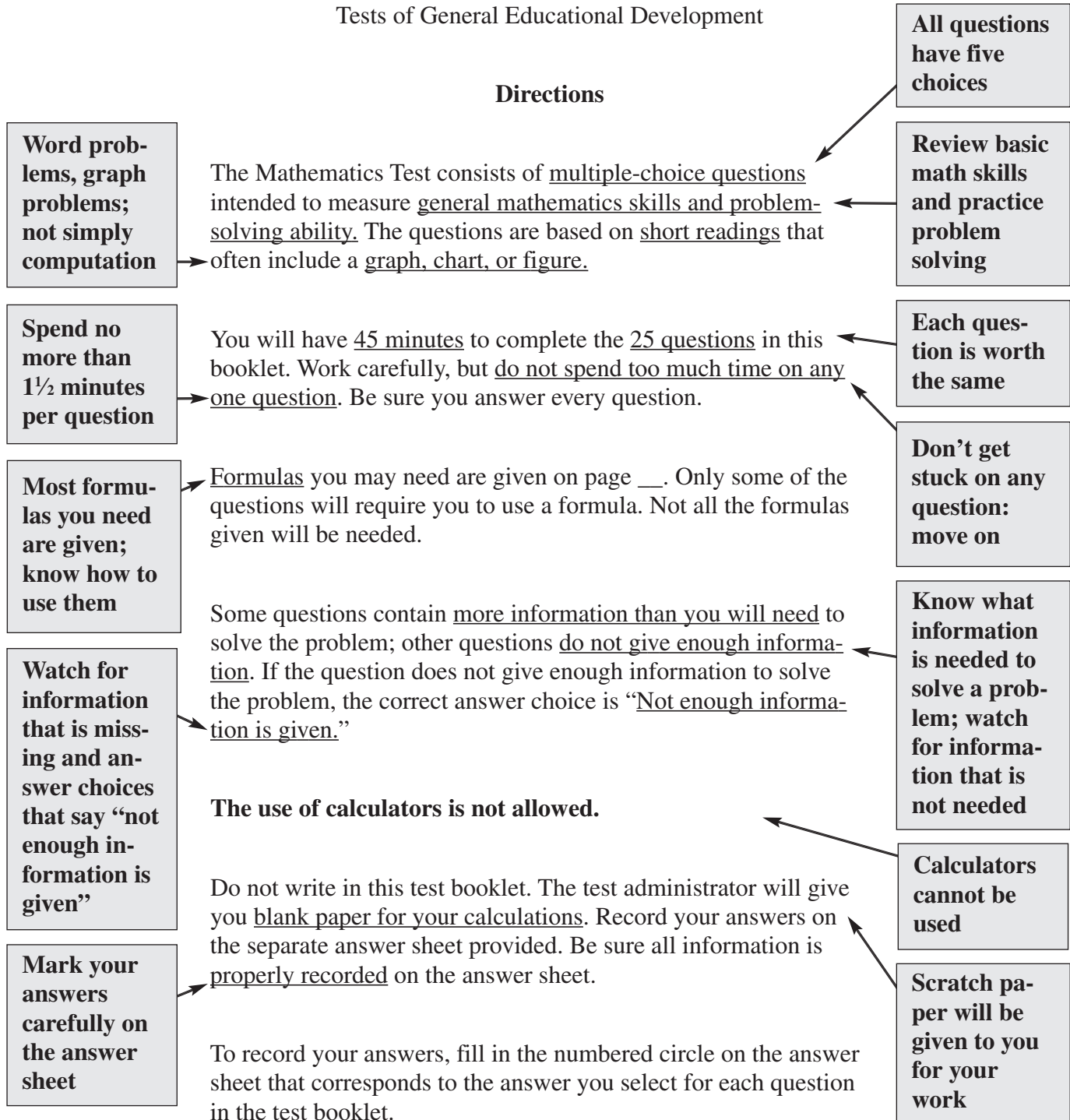
**Do not make any extra marks on your answer sheet**

The directions for Part II (on which you are **not** allowed to use a calculator) are below.

## MATHEMATICS, PART II

### Tests of General Educational Development

#### Directions



**Notice that this question requires basic skills and some problem solving ability**

FOR EXAMPLE:

If a grocery bill totaling \$15.75 is paid with a \$20.00 bill, how much change should be returned?

- (1) \$5.25
- (2) \$4.75
- (3) \$4.25
- (4) \$3.75
- (5) \$3.25

The correct answer is “\$4.25”; therefore, answer space 3 should be marked on your answer sheet.

**Mark only one answer**

Do not rest the point of your pencil on the answer sheet while you are considering your answer. Make no stray or unnecessary marks. If you change an answer, erase your first mark completely. Mark only one answer space for each question; multiple answers will be scored as incorrect. Do not fold or crease your answer sheet. All test materials must be returned to the test administrator.

**Do not make any extra marks on your answer sheet**

## ADDITIONAL DIRECTIONS FOR PART I

### Calculator Use

Since Mathematics Part I allows you to use a calculator, you will be given the following directions:

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#### CALCULATOR DIRECTIONS

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To prepare the calculator for use the **first** time, press the ON (upper-rightmost) key. “DEG” will appear at the top-center of the screen and “0” at the right. This indicates the calculator is in the proper format for all your calculations.

To prepare the calculator for **another** question, press the ON or the red AC key. This clears any entries made previously.

To do any arithmetic, enter the expression as it is written. Press = (equals sign) when finished.

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#### EXAMPLE A: $8 - 3 + 9$

First press ON or AC.

Enter the following:

$$8 \quad - \quad 3 \quad + \quad 9 \quad =$$

The correct answer is 14.

---

If an expression in parentheses is to be multiplied by a number, press  $\times$  (multiplication sign) between the number and the parenthesis sign.

#### EXAMPLE B: $6(8 + 5)$

First press ON or AC.

Enter the following:

$$6 \quad \times \quad ( \quad 8 \quad + \quad 5 \quad ) \quad =$$

The correct answer is 78.

---

To find the square root of a number

- enter the number;
- press the SHIFT (upper-leftmost) key (“SHIFT” appears at top-left of the screen);
- press  $x^2$  (third from the left on top row) to access its second function: square root.



**DO NOT** press SHIFT and  $x^2$  at the same time.

**EXAMPLE C:**  $\sqrt{64}$

First press ON or AC.

Enter the following:

6      4      SHIFT  $x^2$       =

The correct answer is 8.

---

To enter a negative number such as  $-8$

- enter the number without the negative sign (enter 8);
- press the “change sign” (+/-) key which is directly above the 7 key

All arithmetic can be done with positive and/or negative numbers.

**EXAMPLE D:**  $-8 - -5$

First press ON or AC.

Enter the following:

8      +/-      -      5      +/-      =

The correct answer is  $-3$ .

**DO NOT BEGIN TAKING THIS TEST UNTIL TOLD TO DO SO**

## ADDITIONAL DIRECTIONS FOR PART I AND PART II

### Grid-In Questions

Some questions in the math section will require you to grid in your own numerical answer to the problem. Because of this question type, you will also be given the following directions:

#### Standard Grid Directions

Mixed numbers, such as  $3\frac{1}{2}$ , cannot be entered in the alternate format grid. Instead, represent them as decimal numbers (in this case, 3.5) or fractions (in this case,  $\frac{7}{2}$ ). No answer can be a negative number, such as  $-8$ .

To record your answer for an alternate format question

- begin in any column that will allow your answer to be entered;
- write your answer in the boxes on the top row;
- in the column beneath a fraction bar or decimal point (if any) and each number in your answer, fill in the bubble representing that character;
- leave blank any unused column.

#### EXAMPLE:

The scale on a map indicates that  $\frac{1}{2}$  inch represents an actual distance of 120 miles. In inches, how far apart on the map will two towns be if the actual distance between them is 180 miles?

The answer to the above example is  $\frac{3}{4}$ , or 0.75, inches. A few examples of how the answer could be gridded are shown below.

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Points to remember:

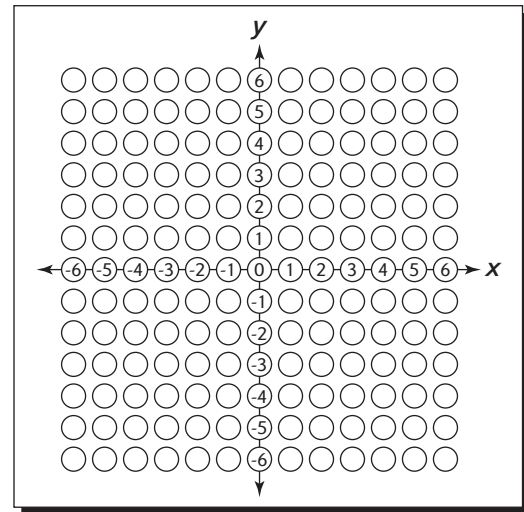
- The answer sheet will be machine scored. **The circles must be filled in correctly.**
- Mark no more than one circle in any column.
- Grid only one answer even if there is more than one correct answer.
- Mixed numbers such as  $3\frac{1}{2}$  must be gridded as 3.5 or  $\frac{7}{2}$ .
- No answer can be a negative number.

## X-Y Coordinate Graphs

Some questions may require you to place your answer on an  $x$ - $y$  coordinate graph. The following directions will be helpful:

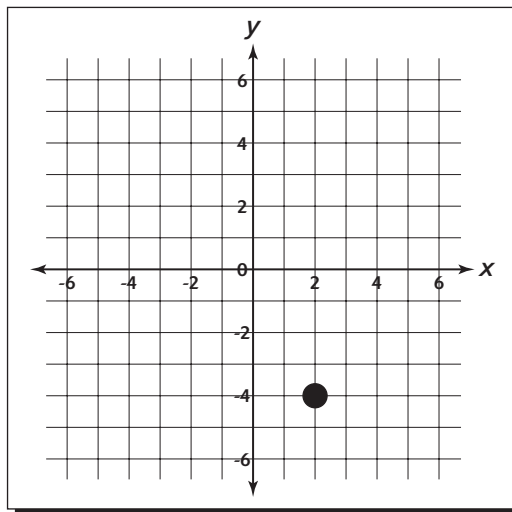
### Coordinate Plane Grid Directions

- To record an answer on the coordinate plane grid, you must have an “ $x$ ” value and a “ $y$ ” value.
- No answer for a coordinate plane question will have a value that is a fraction or a decimal.
- Mark only the **one** circle that represents your answer.



### EXAMPLE

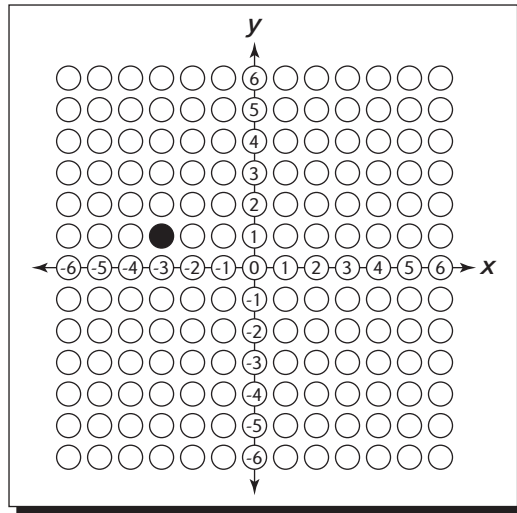
The coordinates of point A, shown on the graph below, are  $(2, -4)$ .



The coordinates of point B, not shown on the graph, are  $(-3, 1)$ . What is the location of point B?

**DO NOT MARK YOUR ANSWER ON THE GRAPH ABOVE.**

Mark your answer on the coordinate plane grid on your answer sheet.

**CORRECT RESPONSE**

## What You Should Do

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- ☐ **Read the problems carefully.**
- ☐ **Make sure that you understand what information is being given and what the question is asking.**
- ☐ **Before starting any calculation, check the answer choices given.**
- ☐ **Estimating or approximating can be useful.**
- ☐ **Pull out important information.**
- ☐ **Use scratch paper effectively.**
- ☐ **Do your calculations carefully.** The two most common mistakes are misreading the problem and simple calculating errors. Remember that you can use a calculator on Part I, but not on Part II.
- ☐ **Refer to graph, charts, drawings, or geometric figures as often as you need to.**  
Graphs, charts, drawings, and geometric figures often take a second and third look. Take an extra few moments to make sure that you understand any visual information given.

The following three sections will use examples to carefully explain the **question types**, show you **what to look for**, and point out **what you should do**.

## Section I: Arithmetic Questions

---

This section includes Number Operations, Number Sense, Data Analysis, Statistics, and Probability.

You may be given **questions** similar to this one **that ask** you to set up a **proportion**. You can also work this question using a **commonsense approach**.

**1.** If eggs sell for \$1 per dozen, how much would 96 eggs cost?

- (1) \$96
- (2) \$84
- (3) \$36
- (4) \$12
- (5) \$ 8

The right answer is **(5)**, \$8.

First, pay special attention to the key words in the question: “*If eggs sell for \$1 per dozen, how much would 96 eggs cost?*” You need to find *how much*. You could set up a proportion as follows:

$$\frac{\text{money}}{\text{eggs}} \quad \frac{\text{money}}{\text{eggs}}$$

$$\frac{1}{12} \quad \frac{x}{96}$$

Then cross multiply:

$$\frac{1}{12} \swarrow \nearrow \frac{x}{96}$$

$$96 = 12x$$

Finally, divide by 12:

$$\frac{96}{12} = \frac{12x}{12}$$

$$8 = x$$

So 96 eggs cost \$8.

You could also work the problem this way, using a commonsense approach: 96 eggs equal exactly 8 dozen eggs. (Divide 96 by 12, since there are 12 eggs in a dozen.) So, if 1 dozen eggs cost \$1, 8 dozen cost \$8.

You could be given a question — similar to the one that follows — that can be solved by a **commonsense approach** or by a **proportion**.

- 2.** If Jonathan can mow his entire lawn in  $\frac{2}{3}$  of an hour, how much of that lawn can he mow in 10 minutes?

(1)  $\frac{1}{10}$

(2)  $\frac{1}{5}$

(3)  $\frac{1}{4}$

(4)  $\frac{2}{3}$

(5)  $\frac{3}{4}$

The right answer is **(3)**  $\frac{1}{4}$  of the lawn.

First pay special attention to key words in the question: “*How much* of that lawn can he mow in 10 minutes?”

Next, to answer this question, you must change hours to minutes. Jonathan can mow his entire lawn in  $\frac{2}{3}$  of an hour, which is the same as 40 minutes.

$$\frac{2}{3} \times 60 = 40 \text{ minutes}$$

Since 10 minutes is  $\frac{1}{4}$  of 40 ( $\frac{10}{40} = \frac{1}{4}$ ), he can mow  $\frac{1}{4}$  of his lawn in 10 minutes.

You can also solve this problem by setting up and solving the following proportions:

$$(\text{Entire lawn in 40 minutes}) \frac{1}{40} = \frac{x}{10} \text{ (What part in 10 minutes?)}$$

$$\text{Multiply by 10: } (10) \frac{1}{40} = \frac{x}{10} (10)$$

$$\frac{10}{40} = \frac{10x}{10}$$

$$\frac{1}{4} = x$$

You could be asked to answer a **proportion/measurement** problem.

**3.** Judith drew a drawing of her school, using the scale of

1 centimeter (cm) on the model = 12 feet in real life.

If the length of the main corridor of her school is 180 feet, how long should Judith have drawn the corridor on the scale drawing?

- (1) 12 cm
- (2) 15 cm
- (3) 18 cm
- (4) 20 cm
- (5) 24 cm

The right answer is (2) 15 cm.

Notice that you must find “*how long*” the corridor should be on the *scale drawing*. To find this *length*, you will need to set up a proportion. Set up the proportion like this:

$$\frac{\text{scale}}{\text{actual}} \qquad \frac{1 \text{ cm}}{12 \text{ ft}} = \frac{x}{180 \text{ ft}}$$

To solve this problem, cross multiply:

$$\frac{1}{12} \swarrow \searrow \frac{x}{180}$$

$$180 = 12x$$

$$\text{Then divide by 12: } \frac{180}{12} = \frac{12x}{12}$$

$$15 = x$$

So the corridor on the scale drawing should be 15 cm long.



You may be given a **ratio** question that is similar to the one that follows.

- 4.** There are three times as many girls enrolled in after-school sports as there are boys enrolled in after-school sports. Which of the following could be the number of girls enrolled in after-school sports?
- (1) 20
  - (2) 24
  - (3) 28
  - (4) 32
  - (5) Not enough information is given.

The right answer is **(2)** 24.

To answer this question, you must use ratios. Notice that you are looking for the *possible number of girls*. Since there are three times as many girls as there are boys enrolled in after-school sports, the ratio is 3 to 1. This ratio could also be given as

6 to 2  
9 to 3  
12 to 4 and so on

The girls' total must then be 3 or a multiple of 3 (3, 6, 9, 12, 15, 18, 21, 24 . . .) The *only* answer choice which is a multiple of three is answer **(2)** 24.

You could be given a question similar to the next one, which asks you to set up a **ratio** and do **simple calculations**.

- 5.** Carol's factory produced 40,000 disks in 1987. In 1986 her factory produced 50,000 disks. What was the percent decrease from 1986 to 1987?
- (1) 10%
  - (2) 20%
  - (3) 25%
  - (4) 30%
  - (5) 40%

The right answer is **(2)** 20%.

First, notice that you are looking for “*percent decrease*.” To find percent decrease (set up a ratio) divide the *change* between the two years by the *starting year*:

$$\frac{\text{change}}{\text{starting year}} \qquad \frac{50,000 - 40,000}{50,000} = \frac{10,000}{50,000}$$

Now change  $\frac{10,000}{50,000}$  to a percent.

Reduce  $\frac{10,000}{50,000}$  to  $\frac{1}{5}$ .

Now divide 5 into 1, which gives .20 or 20%.

You should *memorize* some of the *common fraction-to-percent conversions*.

$$\frac{1}{10} = 10\%$$

$$\frac{4}{10} = \frac{2}{5} = 40\%$$

$$\frac{3}{4} = 75\%$$

$$\frac{2}{10} = \frac{1}{5} = 20\%$$

$$\frac{5}{10} = \frac{1}{2} = 50\%$$

$$\frac{8}{10} = \frac{4}{5} = 80\%$$

$$\frac{1}{4} = 25\%$$

$$\frac{6}{10} = \frac{3}{5} = 60\%$$

$$\frac{9}{10} = 90\%$$

$$\frac{3}{10} = 30\%$$

$$\frac{7}{10} = 70\%$$

You could be given a problem similar to this that you can solve by applying the **averaging formula**.

**6.** Archie works weekends in a department store stockroom. For the four weekends in February, Archie’s checks were \$28.30, \$32.90, \$27.90, and \$30.30. What was Archie’s **AVERAGE** weekly check for February?

- (1) \$27.90
- (2) \$28.40
- (3) \$29.85
- (4) \$30.10
- (5) \$31.40

The right answer is **(3)** \$29.85.

To get an average, find the *total* and then divide by the *number of items*. In this problem, the items total \$119.40.

$$\begin{array}{r} 28.30 \\ 32.90 \\ 27.90 \\ 30.30 \\ \hline 119.40 \end{array}$$

Then divide by 4:

$$\begin{array}{r}
 29.85 \\
 4 \overline{)119.40} \\
 \underline{8} \phantom{00} \\
 39 \phantom{00} \\
 \underline{36} \phantom{00} \\
 34 \phantom{00} \\
 \underline{32} \phantom{00} \\
 20 \phantom{00} \\
 \underline{20} \\
 0
 \end{array}$$

$$\$119.40 \div 4 = \$29.85$$

The average is \$29.85. Did you notice that answer choices (1), (4), and (5) are not reasonable?

You could be given a problem similar to the next one, which asks you to apply the **distance, rate, time formula**.

- 7.** A train traveling from San Diego to Seattle averages 90 miles per hour for the entire trip. The train's route is direct from San Diego to Seattle with no stops, a distance of 1080 miles. At what time will the train arrive in Seattle if it leaves San Diego at 9 a.m.? (Note: San Diego and Seattle are in the same time zone.)

- (1) 1 p.m.
- (2) 3 p.m.
- (3) 5 p.m.
- (4) 7 p.m.
- (5) 9 p.m.

The right answer is (5) 9 p.m.

To solve this problem, you must first notice that you are looking for “*at what time*.” Next you must understand how to use the *distance, rate, time formula*. Using the distance equation from the formula page:

$$\text{distance} = \text{rate} \times \text{time}$$

$$1080 = 90 \times t$$

Divide both sides by 90:

$$\begin{aligned}
 \frac{1080}{90} &= \frac{90t}{90} \\
 12 &= t
 \end{aligned}$$

So it takes the train 12 hours to reach Seattle. The train leaves at 9 a.m.; 12 hours later it will be 9 p.m.

You could be given a problem similar to this that asks you to decide if you have **enough information** to solve the problem.

8. A Zowie battery lasts 60 hours and costs \$1.20. A Rayvox battery lasts 75 hours and is sold at \$4.99 per package. To determine whether a Zowie battery or a Rayvox battery is the better buy, which **ADDITIONAL** piece of information is needed?
- (1) Zowie batteries cost less than Rayvox batteries.
  - (2) Rayvox batteries last 25% longer than Zowie batteries.
  - (3) Rayvox batteries are sold only in packages containing three batteries.
  - (4) Zowie batteries are sold in packages containing only one battery.
  - (5) None of the above information is needed.

The right answer is **(3)**. Rayvox batteries are sold only in packages containing three batteries.

In order to compare the cost of each battery, you must know *how many* Rayvox batteries are in a package that costs \$4.99. Notice that you do *not* have to know which battery is the better buy. You only have to know what information you would need to *determine* which is the better buy.

You may be given a problem similar to the next one, in which you must **work from the answers** and **approximate**.

9. Fred plans to use his savings to equip his new apartment. If Fred has \$800 in savings, which of the following combinations of items can Fred purchase without exceeding his savings? (Disregard tax.)

Item	Cost
A. Personal computer	\$785
B. Microwave oven	\$450
C. Stereo system	\$555
D. Videotape deck	\$285
E. Compact disc player	\$395
F. Color television set	\$510

- (1) A and D
- (2) B and E
- (3) C and D
- (4) D and F
- (5) E and C

The right answer is **(4)** D and F.

To answer this question, you must work from the answers and approximate.

Remember that the total *cannot* be more than \$800.

You can easily see by approximating that in choice **(1)**, A (approximately \$800) and D (approximately \$300) add up to more than \$800. By approximating you can also see that in choice **(2)**, B (\$450) and E (approximately \$400) total more than \$800. In choice **(3)**, C (approximately \$550) and D (approximately \$300) are also larger than \$800. Only items D (\$285) and F (\$510) add up to *less* than \$800 ( $285 + 510 = 795$ ).

**Remember, rounding off numbers and estimating, or approximating, can save you time.**

You may be given a question similar to the next one, which asks you to use your knowledge of **percents** and do **simple calculations**.

- 10.** Sal purchases a used car for \$1200. However, a month later, Sal receives a bill from the motor vehicle bureau for 6% of the purchase price of his car. How much must Sal pay the motor vehicle bureau?
- (1)** \$120
  - (2)** \$100
  - (3)** \$84
  - (4)** \$72
  - (5)** \$60

The right answer is **(4)** \$72.

You must find “*How much* must Sal pay the motor vehicle bureau?” To answer this question, you must find 6% of \$1200. Six percent of \$1200 is the same as .06 times \$1200.

$$.06 \times \$1200 = \$72.00$$

Sal must pay \$72.00. Does this sound like a reasonable answer? Yes. Ten percent of \$1200 is \$120, so 6 percent would be a little more than half of \$120.

You may be given a problem similar to this that asks you to use your knowledge of **percents** and do **simple calculations**. You can also make your choice easier by looking for **reasonable answers**.

- 11.** Louisa must pay 10% of her total income to maintain her membership in the union. If Louisa's total income is \$9000, how much of her income does Louisa keep? (Disregard taxes.)
- (1) \$81
  - (2) \$90
  - (3) \$900
  - (4) \$8010
  - (5) \$8100

The right answer is (5) \$8100.

To determine how much Louisa *keeps*, subtract 10% of her total from her total:

Total – (10% of total) = amount Louisa keeps

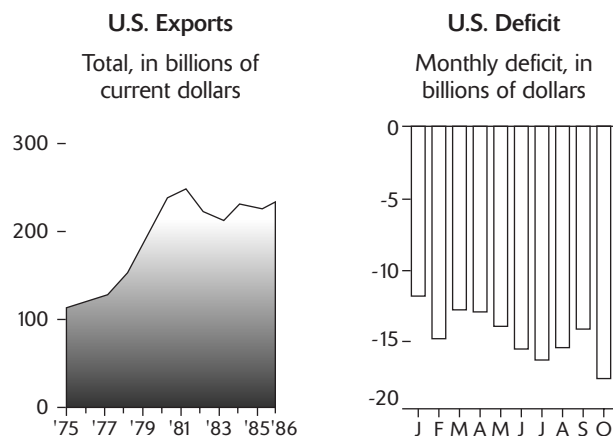
$$(10\% \text{ of } \$9000) = \$900$$

$$\$9000 - (\$900) = \$8100$$

So Louisa keeps \$8100.

After working out the answer, make sure it is reasonable. If she loses 10% of the \$9000, will she keep most of it? Yes. Notice that choices (1), (2), and (3) are not reasonable. If you don't know how to work a problem, and have to guess, first check the answer choices for a *reasonable* answer.

Questions 12 and 13 refer to the following graphs.



**Refer to the chapter on graphs and charts for a careful review.**

You may be given a question similar to the one below that asks you to **approximate** and do **simple calculations**.

- 12.** According to the graph above, approximately how much greater were U.S. exports in 1981 than in 1975?
- (1) 100 billion
  - (2) 130 billion
  - (3) 150 billion
  - (4) 200 billion
  - (5) 240 billion

The right answer is **(2)** 130 billion.

Notice that you are trying to find “*how much greater* were U.S. exports in 1981 than in 1975?” In 1981, U.S. exports were about 240 billion. In 1975, U.S. exports were about 110 billion. So,  $240 - 110 = 130$  billion greater.

You may be asked to answer a second question similar to this.

- 13.** According to the graph above, for how many months was the U.S. deficit greater than 15 billion dollars?
- (1) 4 months
  - (2) 5 months
  - (3) 6 months
  - (4) 7 months
  - (5) 8 months

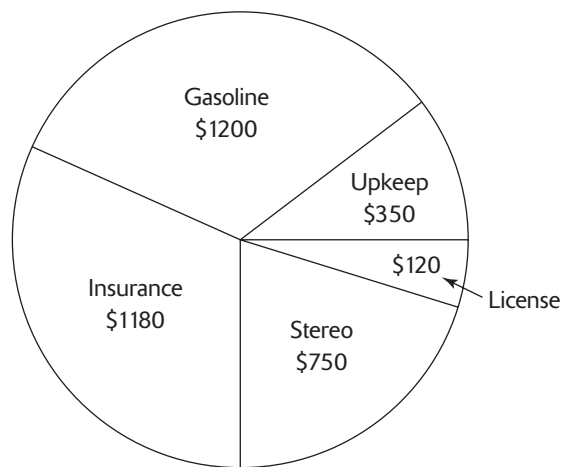
The right answer is **(1)** 4 months.

Look for the key words in the question: “*for how many months* was the U.S. deficit *greater than 15 billion dollars*?” Only June, August, and October had deficits greater than 15 billion dollars. Note that this graph is drawn “upside down,” so a deficit “greater than 15 billion” will have its bottom extend *below* the 15 line. Also remember to use the edge of your paper as a ruler so you can see more easily which bars fall below that line.

You may be asked to answer a problem where a type of **pie chart** is given.

Questions 14 and 15 refer to the following graph.

Tom's Automotive Expenditures in 2002



A question similar to this could follow that can be solved by using **proportions**:

**14.** Approximately what percentage of Tom's automotive expenditures in 2002 was for insurance?

- (1) 12%
- (2) 20%
- (3) 25%
- (4) 33%
- (5) 38%

The right answer is **(4) 33%**.

First, pay special attention to what the question is asking: "*Approximately what percentage of Tom's automotive expenditures in 2002 was for insurance?*" Next, pull out information and try to set up a proportion. To set up a proportion for this percentage problem, use

$$\frac{\text{part}}{\text{whole}} = \frac{x}{100}$$

The *part* representing insurance is \$1180, which (since the question says *approximately*) may be rounded to \$1200. The *whole* is the total amount of Tom's expenditures, which, added up, equals \$3600. So

$$\begin{aligned}\frac{\$1200}{\$3600} &= \frac{x}{100} \\ \frac{1}{3} &= \frac{x}{100}\end{aligned}$$

Cross multiplying:  $3x = 100$

$$x = 33\frac{1}{3}$$



A faster technique would be by inspection, noting that the size of the *insurance* slice of the pie is approximately one-third of the entire pie. One-third equals  $33\frac{1}{3}\%$ .

You may then get a second question similar to this that asks you to apply the **averaging formula**.

**15.** What was Tom’s average monthly expenditure for his automotive license fees?

- (1) \$ 10
- (2) \$ 60
- (3) \$ 120
- (4) \$3600
- (5) Not enough information is given.

The right answer is (1) \$10.

First, remember that you are looking for his “*average monthly expenditure* for his automotive license fees.” To determine Tom’s average *monthly* expenditure for license fees, simply divide the yearly total for license fees (\$120) by the number of months in a year (12):

$$\frac{\$120}{12} = \$10$$

## Section II: Algebra Questions

You could be given a problem similar to this for which you need to do simple calculations with **positive** and **negative numbers**.

**16.** Susan’s home now sits exactly 280 feet above sea level. Geologists estimate that during the Paleozoic age, the site on which Susan’s house presently sits was 600 feet lower than it is now. If the geologists are correct, how many feet **BELOW** sea level was the site during the Paleozoic age?

- (1) 880
- (2) 600
- (3) 420
- (4) 320
- (5) 280

The right answer is (4) 320 feet.

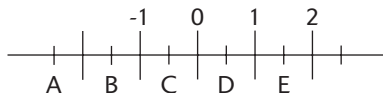
Notice that the question is asking “*how many feet below sea level was the site?*” Presently, Susan’s home sits *280 feet above* sea level. If during the Paleozoic age Susan’s home was 600 feet lower, then

$$\begin{array}{r} \text{Now} \quad \text{Lower} \\ \widehat{280} - \widehat{600} = x \\ -320 = x \end{array}$$

The site was 320 feet below sea level. Read the question again after you choose an answer to make sure that your answer is *reasonable*.

You could be asked to answer a problem where a **number line** is given.

Question 17 refers to the number line below.



A question similar to this that asks you to use your knowledge of **positive** and **negative numbers** could follow:

**17.** On the number line above, which letter represents  $-\frac{3}{2}$ ?

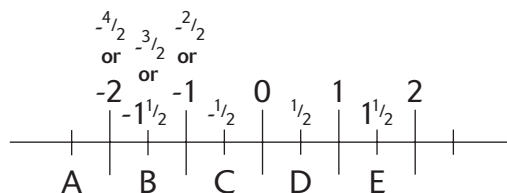
- (1) A
- (2) B
- (3) C
- (4) D
- (5) E

The right answer is **(2) B**.

To answer this question, you must understand *positive* and *negative numbers*. You must also be able to *change fractions to mixed numbers*. Another way of expressing  $-\frac{3}{2}$  is as a mixed number:  $-1\frac{1}{2}$ .

To change into mixed numbers, simply divide the bottom number into the top number:  
 $-3 \div 2 = -1.5$  or  $-1\frac{1}{2}$

B represents  $-1\frac{1}{2}$ . (E represents  $+1\frac{1}{2}$ ; C represents  $-\frac{1}{2}$ ; A represents  $-2\frac{1}{2}$ .) You could also answer this question by counting in the negative direction by  $\frac{1}{2}$ 's:  $-\frac{1}{2}$ ,  $-\frac{2}{2}$ ,  $-\frac{3}{2}$ .



You may be given an **evaluation** problem similar to the following that asks you to do **simple calculations**.

**18.** Evaluate  $6x^2 - 4y$  if  $x = 3$  and  $y = 5$ .

(1) 16

(2) 34

(3) 54

(4) 60

(5) 74

The right answer is (2) 34.

To evaluate an expression, simply plug in the given numbers or values. These types of problems are usually easy to solve as long as you are *careful in your calculations* and understand the *order of operations*. Plugging in the values given for  $x$  and  $y$

$$6x^2 - 4y =$$

$$6(3)^2 - 4(5) =$$

$$6(9) - 4(5) =$$

$$54 - 20 = 34$$

Remember, the order of operations is

*Parentheses*

*Powers*

*Multiplication or division*

*Addition or subtraction*

**You could be given a problem similar to the following in which you need to solve a simple equation. But remember, some questions could ask you to grid in the answer.**

**19.** What is the value of  $x$  in the equation  $5x + 2 = x + 12$ ?

**PLEASE DO NOT WRITE ON THIS TEST BOOKLET**

Mark your answer in the circles in the grid on your answer sheet.

Notice that this problem does not give you any choices. You must solve the problem and then grid in your answer.

To answer this question, you must solve the equation for  $x$ .

First, add  $-2$  to each side:

$$\begin{array}{r} 5x + 2 = x + 12 \\ -2 \quad -2 \\ \hline 5x = x + 10 \end{array}$$

Next, add  $-x$  to each side:

$$\begin{array}{r} 5x = x + 10 \\ -x \quad -x \\ \hline 4x = 10 \end{array}$$

Finally, divide each side by 4:

$$\frac{4x}{4} = \frac{10}{4}$$

So,  $x = 2\frac{2}{4}$ , or  $2\frac{1}{2}$ .

**Remember that you cannot grid  $2\frac{1}{2}$ , since it is a mixed number. You must change  $2\frac{1}{2}$  to 2.5 or  $\frac{5}{2}$  before you can grid your answer.**

Now grid in your answer as follows:

		2	.	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
0	0	0	0	0
1	1	1	1	1
2	2	<input checked="" type="radio"/>	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	<input checked="" type="radio"/>
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

or

		5	/	2
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
0	0	0	0	0
1	1	1	1	1
2	2	2	2	<input checked="" type="radio"/>
3	3	3	3	3
4	4	4	4	4
5	5	<input checked="" type="radio"/>	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

You may be given a problem similar to this where you must set up and solve an **equation**.

**20.** Together, Martina and Arline have saved \$120. If Martina has saved exactly twice what Arline has saved, how much has Arline saved?

- (1) \$20
- (2) \$30
- (3) \$40
- (4) \$60
- (5) \$80

The right answer is **(3)**. Arline has saved \$40.

To answer this question, you will need to *set up an equation*. Notice that the question asks “*how much* has Arline saved?” Set up an equation as follows:

Let  $x$  = amount Arline saved

Since Martina has saved twice as much as Arline has

$2x$  = amount Martina saved

Together they have \$120, so

$$x \text{ (Arline)} + 2x \text{ (Martina)} = \$120$$

Solving:  $3x = \$120$

Now divide by 3:

$$\frac{3x}{3} = \frac{\$120}{3}$$

$$x = \$40$$

So Arline has saved \$40.

You can also work this problem from the *answer choices*. You could let each answer be how much Arline has saved, and then double that amount to find how much Martina has saved. Then, by adding those amounts, you can see if they total \$120. Sometimes working from the answer can be very helpful.

You could be given a problem similar to this in which you could set up and solve an **equation**. You could also work from the **answer choices**.

**21.** Arnold and Karen together scored a total of 25 points for the high school math team. If Karen scored five points more than Arnold did, how many points did Arnold score?

- (1) 5
- (2) 10
- (3) 15
- (4) 20
- (5) 25

The right answer is **(2)**. Arnold scored 10 points.

Notice that you are looking for “*how many points did Arnold score?*” You can solve this problem by setting up a simple equation:

Let  $x$  = Arnold’s score

Then  $x + 5$  = Karen’s score

Arnold’s score + Karen’s score = 25 points

$$x + (x + 5) = 25 \text{ points}$$

Adding:

$$2x + 5 = 25$$

$$2x = 25 - 5$$

$$2x = 20$$

$$x = 10$$

So Arnold scored 10 points.

You can also solve this problem by *working from the answer choices*. Choice **(1)** is not correct because if Arnold scored 5 points, then Karen would score 20 points (total of 25 points). And Karen, we know, scored 5 points more than Arnold did. Choice **(2)** is correct because if Arnold scored 10 points, then Karen would score 15 points, which *is* 5 points more than Arnold scored.

You may be given a **setup** type problem similar to the following that doesn’t ask you for an answer, just for the setup.

**22.** Manuel purchases tickets to an amusement park for his family. If children's tickets cost half price and adult tickets cost full price (\$8.00), which of the expressions below represents the total dollars spent for tickets if there are 2 adults and 6 children in Manuel's family?

- (1)  $2(8) + 3(4)$
- (2)  $2(4) + 6(6)$
- (3)  $2(8) + 4(4)$
- (4)  $2(8) + 6(4)$
- (5)  $2(4) + 8(4)$

The right answer is **(4)**  $2(8) + 6(4)$ .

In this question you are being asked to set up an *expression*. Focus on key words and information given. From the information given you can figure out

The total spent for adult tickets =

$$2 \text{ adults} \times \$8 \text{ for each ticket}$$

the total spent for children's tickets =

$$6 \text{ children} \times \$4 \text{ for each ticket (note: half price of \$8)}$$

So, the total the family spent for tickets was  $2(8) + 6(4)$ .

*You may be given a situation similar to the following:*

Questions 23 and 24 are based on the following information.

At the school football game, Hillary sells programs at 75 cents each and pennants at \$1.00 each. At the last football game, she sold 50 programs and 80 pennants.

You could be given a question similar to this that asks you to set up an **expression**.

**23.** Which expression below shows how much more money Hillary collected at the game from selling pennants than she did from selling programs?

- (1)  $80(\$1.00) - 50(\$0.75)$
- (2)  $80 - 50(\$0.25)$
- (3)  $30(\$1.00 - \$0.75)$
- (4)  $80 - 50(\$1.00 - \$0.75)$
- (5)  $80(\$0.75) - 50(\$1.00)$

The right answer is **(1)**  $80(\$1.00) - 50(\$0.75)$ .

In this question you are asked *to set up a problem, not give an answer*. Set the problem up as though you were solving the problem. To find the difference in money collected from selling pennants:

$$80 \text{ pennants at } \$1.00 \text{ each} = 80(\$1.00)$$

Then figure the total money collected from selling programs:

$$50 \text{ programs at } \$.75 \text{ each} = 50(\$ .75)$$

Then subtract the total money from programs from the total money from pennants:

$$80(\$1.00) - 50(\$ .75)$$

You may be asked another question similar to the following that requires you to perform **simple calculations**.

**24.** If Hillary gets to keep 20% of the total money she takes in, how much would Hillary keep from the sale of programs and pennants?

- (1) \$ 8.00
- (2) \$11.75
- (3) \$23.50
- (4) \$25.00
- (5) \$47.00

The right answer is **(3)** \$23.50.

You need to find *how much Hillary keeps*. First find the total collected:

$$80 \times \$1.00 = \$80.00$$

$$50 \times \$ .75 = \$37.50$$

\$117.50 total collected from pennants and programs

Now multiply by 20%:

$$(.20) (\$117.50) = \$23.50$$

**Remember, if a question like this one is in Part I, you can use your calculator.**



Before you start section III: Geometry and Measurement, take a careful look at formulas and how to use them. In the actual GED Mathematics Test, you will be given the following formulas to help you. You should understand how to use each formula. The pages that follow the formulas pages in this section explain the formulas and show you how they are used. Toward the end of this section you will find problems, many of which use these formulas.

## Formulas

A page similar to this will appear on your mathematics portion of the GED:

### FORMULAS

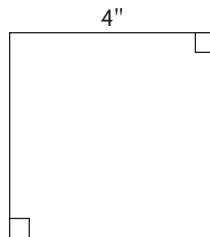
Description	Formulas
AREA (A) of a:	
square	$A = s^2$ ; where $s$ = side
rectangle	$A = lw$ ; where $l$ = length, $w$ = width
parallelogram	$A = bh$ ; where $b$ = base, $h$ = height
triangle	$A = \frac{1}{2}bh$ ; where $b$ = base, $h$ = height
trapezoid	$A = \frac{1}{2}(b_1 + b_2)h$ ; where $b_1$ and $b_2$ are the bases and $h$ is the height
circle	$A = \pi r^2$ ; where $r$ = radius, $h$ = height
PERIMETER (P) of a:	
square	$P = 4s$ ; where $s$ = side
rectangle	$P = 2l + 2w$ ; where $l$ = length, $w$ = width
triangle	$P = a + b + c$ ; where $a$ , $b$ , and $c$ are the sides
CIRCUMFERENCE (C)	$C = \pi d$ ; where $\pi = 3.14$ , $d$ = diameter of a circle
VOLUME (V) of a:	
cube	$V = s^3$ ; where $s$ = side
rectangular container	$V = lwh$ ; where $l$ = length, $w$ = width, $h$ = height
square pyramid	$V = \frac{1}{3} \times (\text{base edge})^2 \times \text{height}$
cylinder	$V = \pi r^2 h$ ; where $\pi = 3.14$ , $r$ = radius, $h$ = height
cone	$V = \frac{1}{3} \times \pi \times r^2 \times h$ ; where $r$ is the radius, $h$ is the height, and $\pi = 3.14$
PYTHAGOREAN RELATIONSHIP	$a^2 + b^2 = c^2$ ; where $a$ and $b$ are the legs of a right triangle and $c$ is the hypotenuse
COORDINATE GEOMETRY	distance ( $d$ ) between two points in a plane $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ ; where $(x_1, y_1)$ and $(x_2, y_2)$ are two points in a plane  slope of a line ( $m$ ) = $(y_2 - y_1)/(x_2 - x_1)$ ; where $(x_1, y_1)$ and $(x_2, y_2)$ are two points in a plane

Description	Formulas
<b>MEASURES OF CENTRAL TENDENCY:</b>	
mean	$\text{mean} = \frac{x_1 + x_2 + \cdots + x_n}{n}$ ; where the $x$ 's are the values for which a mean is desired, and $n$ = number of values in the series
median	median = the point in an ordered set of numbers at which half of the numbers are above and half of the numbers are below this value
simple interest ( $i$ )	$i = prt$ ; where $p$ = principal, $r$ = rate, $t$ = time
distance ( $d$ ) as a function of rate and time	$d = rt$ ; where $r$ = rate, $t$ = time
total cost ( $c$ )	$c = nr$ ; where $n$ = number of units, $r$ = costs per unit

**AREA (A) of a square:  $A = s^2$ ; where  $s$  = side**

If  $s$  stands for the length of a side of a square, then multiply side times side to get the area.

What is the area of the square below?

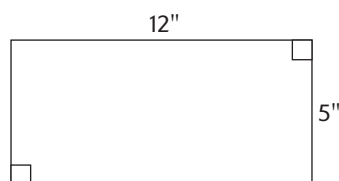


$$A = s \times s = 4 \times 4 = 16 \text{ sq in}$$

**AREA (A) of a rectangle:  $A = lw$ ; where  $l$  = length,  $w$  = width**

If  $l$  stands for the length of a rectangle and  $w$  stands for the width, then multiply the length times the width to get the area.

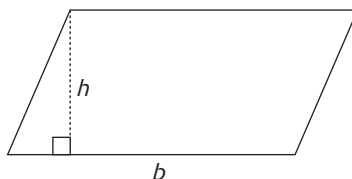
What is the area of the rectangle below?



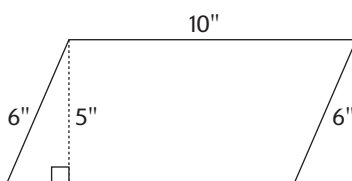
$$A = lw = 12(5) = 60 \text{ sq in}$$

**AREA (A) of a parallelogram:  $A = bh$ ; where  $b$  = base,  $h$  = height**

To find the area of a parallelogram where  $b$  equals the base and  $h$  equals the height, multiply the base times the height.



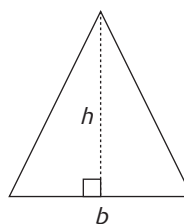
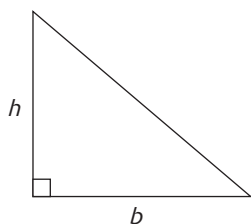
Find the area of the parallelogram below.



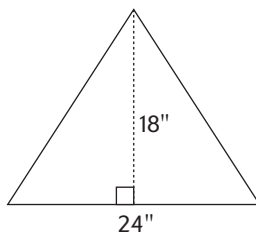
$$A = bh = 10(5) = 50 \text{ sq in}$$

**AREA (A) of a triangle:  $A = \frac{1}{2}bh$ ; where  $b$  = base,  $h$  = height**

To find the area of a triangle where  $b$  equals the base and  $h$  equals the height, multiply base times height times  $\frac{1}{2}$ .



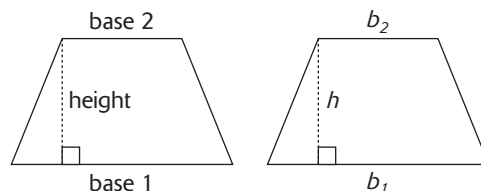
Find the area of the triangle below.



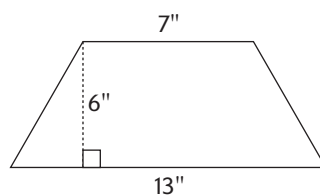
$$A = \frac{1}{2}bh = \frac{1}{2}(24)(18) = 216 \text{ sq in}$$

**AREA (A) of a trapezoid:  $A = \frac{1}{2}(b_1 + b_2)h$ ;  $b_1$  and  $b_2$  are the bases and  $h$  is the height**

To find the area of a trapezoid where  $b_1$  and  $b_2$  are the bases and  $h$  is the height, simply plug into the formula  $A = \frac{1}{2}(b_1 + b_2)h$ . You will need to know the length of the bases and the height.



Find the area of the trapezoid below.

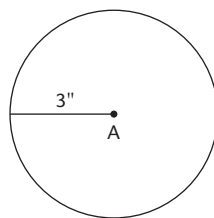


$$A = \frac{1}{2}(b_1 + b_2)h = \frac{1}{2}(13 + 7) = \frac{1}{2}(20)(6) = 10(6) = 60 \text{ sq in}$$

**AREA (A) of a circle:  $A = \pi r^2$ ; where  $\pi = 3.14$ ,  $r$  = radius**

To find the area of a circle where  $r$  is the radius and  $\pi = 3.14$ , square the radius and multiply it by 3.14.

Find the area of circle A if the radius is 3".



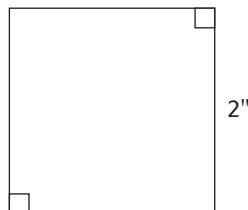
$$A = \pi r^2 = 3.14(3)^2 = 3.14(9) = 28.26 \text{ sq in}$$

**PERIMETER** means the total distance all the way around the outside of a many-sided figure. This perimeter can be found by adding up the length of all of the sides. No special formulas are really needed, but there are a few that you will commonly see.

**PERIMETER (P) OF A SQUARE:  $P = 4s$ ; where  $s$  = side**

To find the perimeter of a square where  $s$  stands for the length of a side, multiply the side times four. Since all four sides are the same length, this will give you the perimeter.

In the square below, find the perimeter if the length of a side is 2".

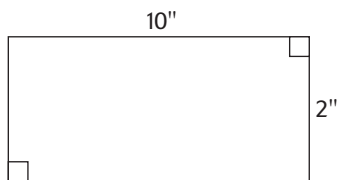


$$P = 4s = 4(2) = 8 \text{ in}$$

**PERIMETER ( $P$ ) of a rectangle:  $P = 2l + 2w$ ; where  $l$  = length,  $w$  = width**

To find the perimeter of a rectangle where  $l$  stands for the length and  $w$  stands for the width, double the length and double the width; add these two together.

What is the perimeter of the rectangle below?

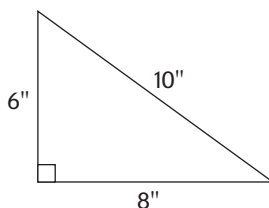


$$P = 2l + 2w = 2(10) + 2(2) = 20 + 4 = 24 \text{ in}$$

**PERIMETER ( $P$ ) of a triangle:  $P = a + b + c$ ; where  $a$ ,  $b$ , and  $c$  are the sides**

To find the perimeter of any triangle, add the length of each of the three sides together.

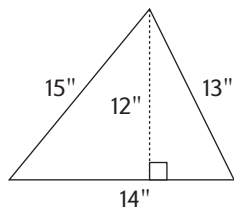
Find the perimeter of the triangle below.



$$P = a + b + c = 8 + 6 + 10 = 24 \text{ in}$$

Another example:

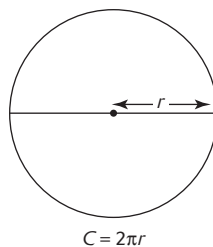
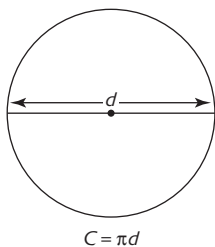
What is the perimeter of the *large* triangle below?



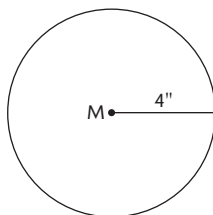
$$P = a + b + c = 14 + 15 + 13 = 42 \text{ in}$$

**CIRCUMFERENCE (C) of a circle:  $C = \pi d$ ; where  $\pi = 3.14$ ;  $d$  = diameter**

Circumference is the distance around the circle. The formula for the circumference is  $C = \pi d$ , where  $d$  stands for the diameter of the circle. The formula  $C = 2\pi r$ , where  $r$  stands for the radius, can also be used.



Find the circumference of circle M if the radius is 4".



Using the formula  $C = 2\pi r$ :

$$C = 2\pi r = (2)(3.14)(4) = 6.28(4) = 25.12 \text{ in}$$

In circle M, since the radius is 4", the diameter ( $d$ ) is 8". So using the formula  $C = \pi d$ :

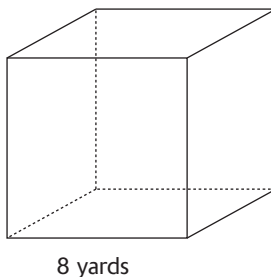
$$C = \pi d = 3.14(8) = 25.12 \text{ in}$$

**VOLUME (V) of a cube:  $V = s^3$ ; where  $s$  = side**

Since all sides of a cube are the same, to find the volume of a cube, multiply side times side times side. If  $s$  stands for the length of a side, then the formula would look like this:

$$V = s \times s \times s$$

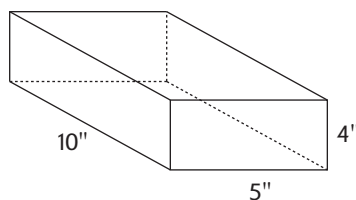
What is the volume of the cube below?



$$V = 8 \times 8 \times 8 = 512 \text{ cu yds}$$

**VOLUME (V) of a rectangular container:  $V = lwh$ ; where  $l$  = length,  $w$  = width,  $h$  = height**

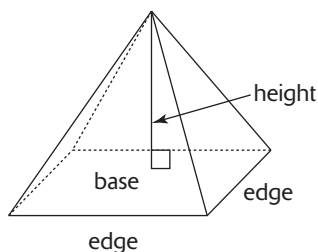
Find the volume of the rectangular container below.



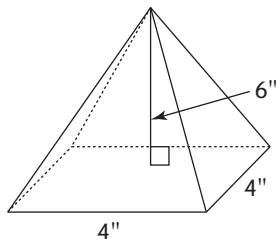
$$V = lwh = (10)(5)(4) = 200 \text{ cu in}$$

**VOLUME (V) of a square pyramid:  $V = \frac{1}{3} \times (\text{base edge})^2 \times (\text{height})$** 

To find the volume of a square pyramid, plug into the formula  $V = \frac{1}{3} \times (\text{base edge})^2 \times (\text{height})$



What is the volume of the square pyramid below?

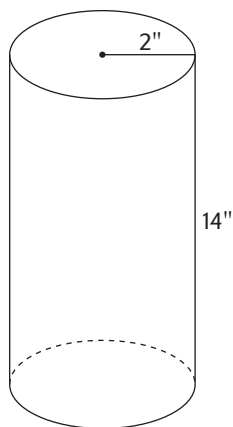


$$V = \frac{1}{3}(4)^2(6) = \frac{1}{3}(16)(6) = \frac{1}{3}(96) = 32 \text{ cu in}$$

**VOLUME (V) of a cylinder:  $V = \pi r^2 h$ ; where  $\pi = 3.14$ ,  $r$  = radius,  $h$  = height**

To find the volume of a cylinder, plug into the formula  $V = \pi r^2 h$ . You would need to know the radius ( $r$ ) of the bases, the height, ( $h$ ), and that  $\pi$  is 3.14.

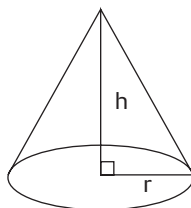
Find the volume of the following cylinder.



$$V = \pi r^2 h = (3.14)(2)^2(14) = (3.14)(4)(14) = (3.14)(56) = 175.84 \text{ cu in}$$

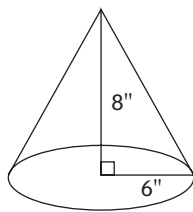
**VOLUME (V) of a cone:  $V = \frac{1}{3} \times \pi \times r^2 \times h$ ; where  $r$  is the radius,  $h$  is the height, and  $\pi = 3.14$**

To find the volume of a cone, plug into the formula  $V = \frac{1}{3}\pi r^2 h$ . You would need to know the radius ( $r$ ), and height ( $h$ ), and that  $\pi$  is 3.14.





Find the volume of the following cone.



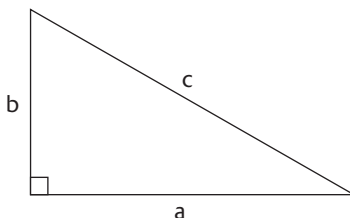
$$V = \frac{1}{3}\pi r^2 h = (1/3)(3.14)(6)^2(8) = (1/3)(3.14)(36)(8) = (3.14)(1/3)(36)(8) = (3.14)(12)(8) = (3.14)(96) = 301.44 \text{ cu in}$$

**PYTHAGOREAN RELATIONSHIP:**  $a^2 + b^2 = c^2$ ; where  $a$  and  $b$  are the legs of a right triangle and  $c$  is the hypotenuse

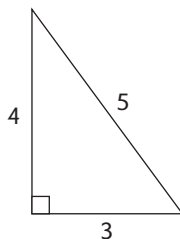
In any right triangle, the relationship between the length of the sides is stated by the Pythagorean theorem. The parts of a right triangle are

- $\angle C$  is the right angle.
- The side opposite the right angle is called the *hypotenuse* (side  $c$ ). (The hypotenuse will always be the *longest* side.)
- The other two sides are called the *legs* (sides  $a$  and  $b$ ).

The three lengths  $a$ ,  $b$ , and  $c$  will always be numbers such that  $a^2 + b^2 = c^2$ .



If  $a = 3$ ,  $b = 4$ , and  $c = 5$ .



$$a^2 + b^2 = c^2$$

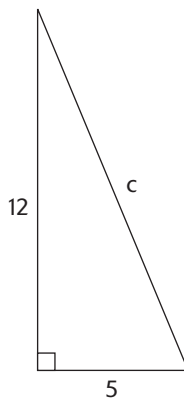
$$3^2 + 4^2 = 5^2$$

$$9 + 16 = 25$$

$$25 = 25$$

So 3-4-5 is called a *Pythagorean triple*. There are other values for  $a$ ,  $b$ , and  $c$  that will always work. One is 5-12-13. Any *multiple* of one of these triples will also work. For example, using the 3-4-5: 6-8-10, 9-12-15, and 15-20-25 will also be Pythagorean triples.

Find  $c$  in this right triangle.



$$a^2 + b^2 = c^2$$

$$5^2 + 12^2 = c^2$$

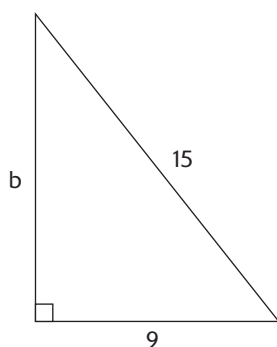
$$25 + 144 = c^2$$

$$169 = c^2$$

$$13 = c$$

You might be asked to find the  $a$  side or the  $b$  side rather than the  $c$  side.

Find  $b$  in this right triangle.



$$a^2 + b^2 = c^2$$

$$9^2 + b^2 = 15^2$$

$$81 + b^2 = 225$$

$$b^2 = 225 - 81$$

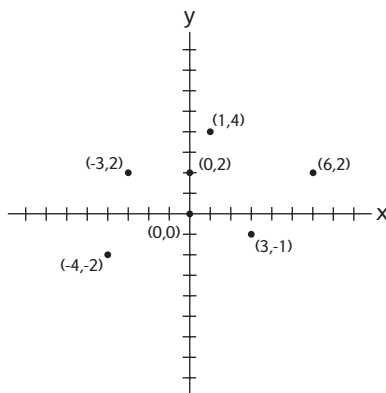
$$b^2 = 144$$

$$b = 12$$

## Coordinate Geometry

**DISTANCE ( $d$ ) between two points in a plane:**  $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ ; where  $(x_1, y_1)$  and  $(x_2, y_2)$  are two points in a plane

Each point on a plane is located by a unique ordered pair of numbers called the *coordinates*. Some coordinates are shown below.

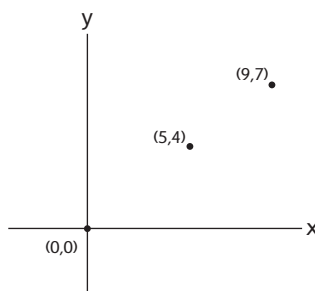


Notice that on the  $x$ -axis, numbers to the right of 0 are positive and to the left of 0 are negative. On the  $y$ -axis, numbers above 0 are positive and below 0 are negative. Also, notice that the *first* number in the ordered pair is called the  *$x$ -coordinate*, while the *second* number is the  *$y$ -coordinate*. The  $x$ -coordinate shows the right or left direction, and the  $y$ -coordinate shows the up and down direction.

To find the distance between two points in a plane, plug into the formula

$d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$ ; where  $(x_1, y_1)$  and  $(x_2, y_2)$  are two points in a plane.

Find the distance between the points  $(9, 7)$  and  $(5, 4)$ .

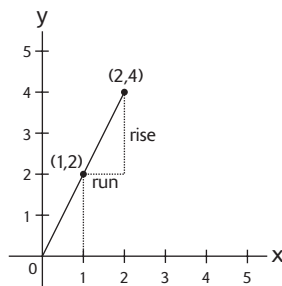


$$d = \sqrt{(5 - 9)^2 + (4 - 7)^2} = \sqrt{(-4)^2 + (-3)^2} = \sqrt{16 + 9} = \sqrt{25} = 5$$

**SLOPE OF A LINE ( $m$ ):**  $m = \frac{y_2 - y_1}{x_2 - x_1}$ ; where  $(x_1, y_1)$  and  $(x_2, y_2)$  are two points in a plane

The *slope of a line* is defined as the *rise over the run* — that is, how fast the line goes up as it goes across.

What is the slope of the line in the following figure?



$$\text{rise} = 2$$

$$\text{run} = 1$$

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{2}{1}$$

This slope was easy to determine from the diagram. If we use the formula, it would look like this:

$$m = \frac{y_2 - y_1}{x_2 - x_1} \text{ where } (x_1, y_1) \text{ and } (x_2, y_2) \text{ are two points in a plane.}$$

$$(x_1, y_1) = (1, 2)$$

$$(x_2, y_2) = (2, 4)$$

$$m = \frac{(4 - 2)}{(2 - 1)} = \frac{2}{1} = 2$$

## Measures of Central Tendency

**MEAN:**  $\text{mean} = \frac{x_1 + x_2 + \dots + x_n}{n}$ ; where the  $x$ 's are the values for which a mean is desired, and  $n$  = number of values in the series

The mean is usually called the *average*. It is one of the most commonly used measures. To find the mean, add up the items and divide by the number of items.

What is the mean of 0, 12, 18, 20, 31, and 45?

First add the numbers:  $0 + 12 + 18 + 20 + 31 + 45 = 126$ .

Now divide the total by 6:  $126 \div 6 = 21$ .

The mean is 21.

**MEDIAN: median = the point in an ordered set of numbers at which half of the numbers are above and half of the numbers are below this value**

The median of a set of numbers is the halfway point, or the middle number, when the numbers are in order. To find the median, first put the numbers in order, either from lowest to highest or highest to lowest. Then count in half way. If there is an *odd* number of items, then the median is the *middle item*. If there is an *even* number of items, then the median is the *average of the two middle numbers*.

Find the median of 7, 5, 3, 4, and 6.

First put the numbers in order: 3, 4, 5, 6, 7

Now find the middle number (the third one in this case): 3, 4, 5, 6, 7

The median is 5.

Another example:

Find the median of 6, 4, 5, and 10.

First put the numbers in order: 4, 5, 6, 10.

The two middle numbers are 5 and 6. Now find the average:

$$5 + 6 = 11$$

$$11 \div 2 = 1\frac{1}{2} \text{ or } 5\frac{1}{2}$$

The median is  $5\frac{1}{2}$ .

**SIMPLE INTEREST ( $i$ ):  $i = prt$ ; where  $p$  = principal,  $r$  = rate,  $t$  = time**

To find the simple interest, multiply the principal, rate, and time together. Remember, the time must be in *years* and the rate must be *per year*.

How much simple interest will an account earn in five years if \$500 is invested at 8% per year?

Plug into the formula  $i = prt$ :

$$i = (500)(.08)(5)$$

$$i = 200$$

The interest will be \$200. Notice that you were multiplying the *principal* (\$500) times the *rate* (8%, or .08) times the *time* (5 years).

**DISTANCE ( $d$ ) as function of rate and time:  $d = rt$ ; where  $r$  = rate,  $t$  = time**

The formula *distance equals rate times time* ( $d = rt$ ) can be used to find the distance when you know the rate and time.

How many miles will a speedboat travel going 80 mph for  $2\frac{1}{2}$  hours?

First notice that you must find *how many miles*. Now, using the information given in the problem, plug into the equation:

$$d = rt$$

$$d = 80(2.5)$$

$$d = 200 \text{ mi}$$

So the speedboat will travel 200 miles.

This same formula can be used to find the time when you know the distance and rate.

How long will it take a bus traveling 72 km/hr to go 36 km?

First notice that you must find *how long will it take* (time). Now, using the information given in the problem, plug into the equation

$$d = rt$$

$$36 = 72t$$

Divide each side by 72:

$$\frac{36}{72} = \frac{72t}{72}$$

$$\frac{1}{2} = t$$

So it will take one-half hour for the bus to travel 36 km at 72 km/hr.

**TOTAL COST ( $c$ ):  $c = nr$ ; where  $n$  = number of units,  $r$  = cost per unit**

To find the total cost if you know the number of units ( $n$ ) and the cost per unit ( $r$ ), plug into the formula  $c = nr$ .

Tom bought 20 widgets at \$5.00 each. What was the total cost for the 20 widgets? (No tax was charged.)

The formula is  $c$  (total cost) =  $n$  (20, number of units)  $\times$   $r$  (\$5.00, cost per unit)

$$c = 20(\$5.00)$$

$$c = \$100.00$$

The total cost is \$100.00.

## Section III: Geometry and Measurement Questions

This section is a continuation of Sections I and II.

You could be given a **measurement** question similar to the one that follows, in which you need to decide if you have **enough information**.

**25.** A rectangle floor is exactly 20 feet long and 40 feet wide. How many square tiles, each the same size, are able to fit on the floor without overlapping?

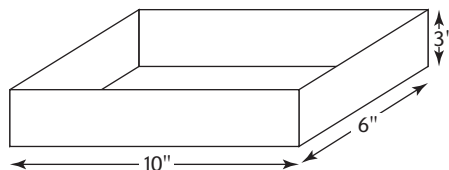
- (1) 20
- (2) 40
- (3) 400
- (4) 800
- (5) Not enough information is given.

The right answer is **(5)**. Not enough information is given.

You are looking for “*how many*” square tiles will fit. To find *how many*, you need the dimensions of the tiles. Since the exact size of the square tiles is not given, you do not have enough information to determine how many tiles can be fitted on the floor.

You may be given a figure similar to the one that follows and a question in which you are asked to **visualize the situation**.

*Question 26 refers to the following diagram.*

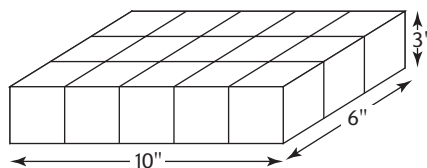


**26.** The dimensions of an empty box are shown in the diagram above. What is the maximum number of milk containers that can fit into the empty box if each milk container is 2" long, 2" wide, and 3" high?

- (1) 5
- (2) 10
- (3) 15
- (4) 30
- (5) 60

The right answer is **(3) 15**.

You are looking for the “*maximum number* of milk containers that can fit.”



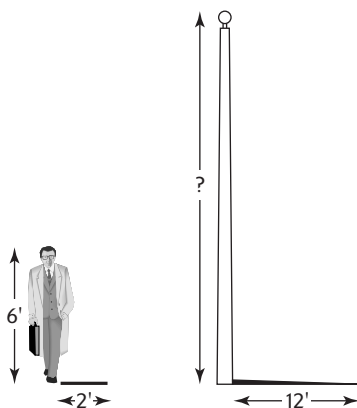
Since each milk container is 2" wide, 5 milk containers can fit across the length of 10". Since each container's width is 2" and the width of each box is 6", the container will fit 3 deep (3 rows).

So, 5 containers across times 3 containers deep gives  $5 \times 3 = 15$ . (Since the height of the empty box equals the height of the containers, the containers cannot be *stacked* within the box.)



You may be given a picture similar to the next one followed by a question in which you need to apply your knowledge of **ratio** and **proportion**. But remember, some questions could ask you to grid in the answer.

Question 27 is based on the following diagram.



- 27.** A school contest is held that requires contestants to guess how tall the school flagpole is. Arnold, who is 6 feet tall, casts a 2-foot shadow at the same time that the school flagpole casts a 12-foot shadow, as shown in the diagram above. How tall is the flagpole (in feet)?

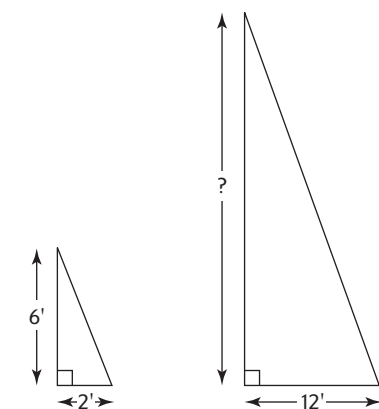
**PLEASE DO NOT WRITE ON THIS TEST BOOKLET.**

Mark your answer in the circles in the grid on your answer sheet.

Notice that this problem does not give you any choices. You must solve the problem and then grid in your answer.

First, pay special attention to what you are looking for: “*How tall is the flagpole?*” You are looking for *height*.

Next, to answer this question, you will need to use similar triangles to set up a proportion. Shadows of objects measured at the same time form triangles that are *similar* and therefore *in proportion*. So a ratio may be expressed:



$$\frac{\text{Arnold's height}}{\text{Arnold's shadow}} = \frac{\text{flagpole's height}}{\text{flagpole's shadow}}$$

Now plug in the numbers:

$$\frac{6}{2} = \frac{x}{12}$$

Cross multiply:
























































$$\frac{6}{2} \swarrow \searrow \frac{x}{12}$$

$$72 = 2x$$

Finally divide by 2:

$$\frac{72}{2} = \frac{2x}{2}$$

$$36 = x$$

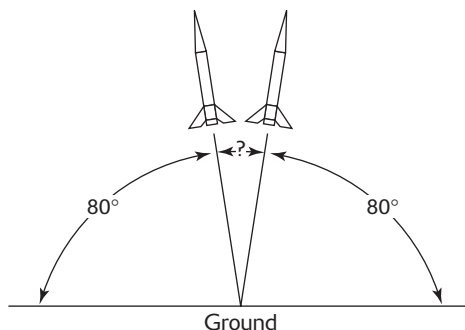
			3	6
				
				
				
				
				
				
				
				
				
				
				

The flagpole is 36 feet tall.

Now grid in your answer as shown on the right.

You may be given a diagram similar to this followed by a problem in which you need to use your knowledge of **angles**.

*Question 28 is based on the following drawing.*



**28.** Two model rockets are launched from the same launching pad into the sky, each at an 80-degree angle with the ground, as shown in the diagram above. What angle do the rockets' paths make with each other?

- (1)  $10^\circ$
- (2)  $20^\circ$
- (3)  $40^\circ$
- (4)  $100^\circ$
- (5) Not enough information is given.

The right answer is (2)  $20^\circ$ .

First, pay special attention to the key words in the question: “*What angle* do the rockets’ paths make *with each other*?” Next, use the information given in the diagram and your knowledge of the angle measure of straight lines.

The total number of degrees in a straight line (for instance, the ground) equals 180. So in the diagram

$$80^\circ + x^\circ + 80^\circ = 180^\circ$$

Simplifying the left side gives

$$x + 160 = 180$$

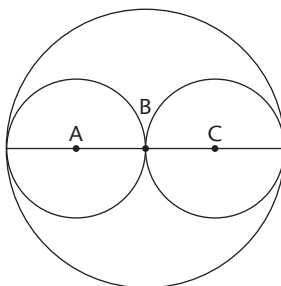
Now subtract 160 from both sides:

$$\begin{array}{r} x + 160 = 180 \\ -160 \quad -160 \\ \hline x = 20 \end{array}$$

So the angle formed is  $20^\circ$ .

You could be given a diagram similar to this followed by a question asking you about **radii** of a circle.

*Question 29 is based on the following diagram.*



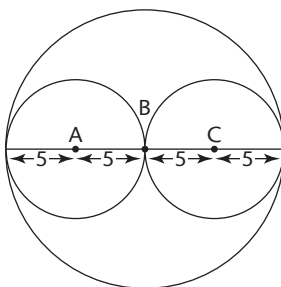
- 29.** Two small circles with the same radius, and with centers A and C, are inscribed in a large circle whose center is at B, as shown in the diagram above. If the distance from A to C is 10 cm, what is the radius of the large circle?

- (1) 5 cm
- (2) 10 cm
- (3) 20 cm
- (4) 25 cm
- (5) 30 cm

The right answer is (2) 10 cm.

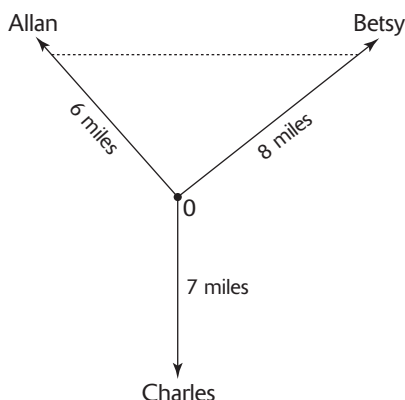
Notice that you are looking for the “*radius of the large circle.*” To solve this problem, you will need to use your knowledge of *radii* and *diameters*.

If  $AC = 10$  cm, then the small circles have the same radius,  $AB = 5$ . So the radius of the circle A is 5 cm. Its diameter is double its radius, or 10 cm, which also happens to be the radius of the large circle. This can be more easily seen in the diagram below:



You may be given a diagram similar to this followed by a question in which you have to use a **formula** (in this case, the Pythagorean theorem).

*Question 30 is based on the following diagram.*



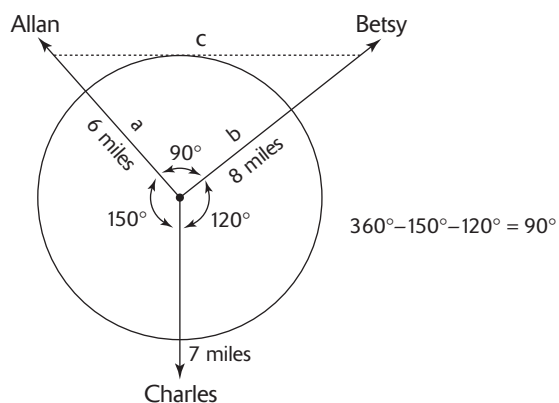
**30.** Allan, Betsy, and Charles each begin at point 0 and each travel in a straight line away from each other, as shown in the diagram above. Allan walks 6 miles and stops. Betsy walks 8 miles and stops. Charles walks 7 miles and stops. If the angle between Betsy's path and Charles's path is 120 degrees, and the angle between Allan's path and Charles's path is 150 degrees, how far will Allan be from Betsy after they all stop walking?

- (1) 6 miles
- (2) 7 miles
- (3) 8 miles
- (4) 10 miles
- (5) 12 miles

The right answer is **(4)** 10 miles.

To answer this question, you will need to determine a right triangle and then use the Pythagorean theorem. Notice that the question is asking "*how far.*" So you will need to find a distance, or length. Now let's use the information given and do some careful thinking.

Since there are 360 degrees in a circle around any point, the angle between Allan's path and Betsy's path is 90 degrees. So the triangle formed by Allan, Betsy, and point 0 is a right triangle (contains a 90-degree angle). You can now use the Pythagorean theorem to find out the length of the third side of the triangle:



$$a^2 + b^2 = c^2$$

$$(6)^2 + (8)^2 = c^2$$

$$36 + 64 = c^2$$

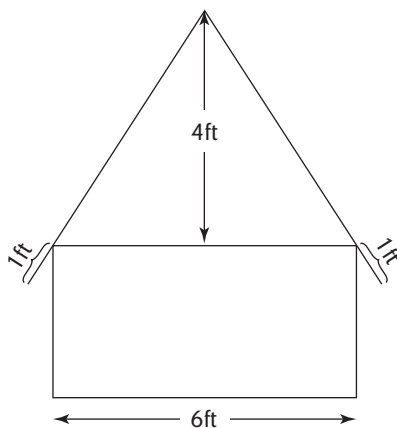
$$100 = c^2$$

$$10 = c$$

So the distance is 10 miles.

You may be given a diagram similar to this followed by a problem in which you will need to apply a **formula** (in this case, the Pythagorean theorem).

Question 31 refers to the following diagram.



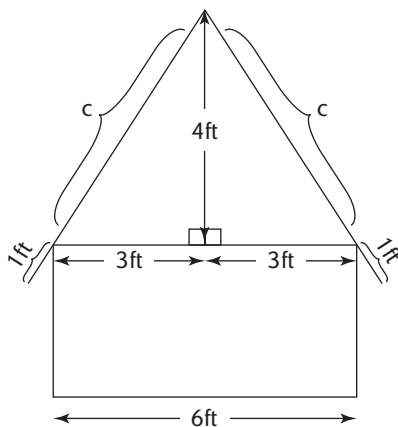
- 31.** An equal-sided roof is to be constructed on top of a rectangular shed, as drawn above. The highest point of the roof is 4 feet above the top of the shed. If the width of the shed is 6 feet, and the roof must overhang the shed by 1 foot on each side, what is the **TOTAL** length along both sides of the roof?

- (1) 5 feet
- (2) 6 feet
- (3) 10 feet
- (4) 11 feet
- (5) 12 feet

The right answer is **(5)** 12 feet.

First, pay special attention to what you are trying to find—in this case, “*the total length along both sides of the roof.*” Next, take full advantage of the information given.

Two equal right triangles are formed by the top of the shed and the roof, with sides 3, 4, and  $x$ . Using the Pythagorean theorem given in the list of formulas, you can solve for  $x$ :



$$a^2 + b^2 = c^2$$

$$3^2 + 4^2 = c^2$$

$$9 + 16 = c^2$$

$$25 = c^2$$

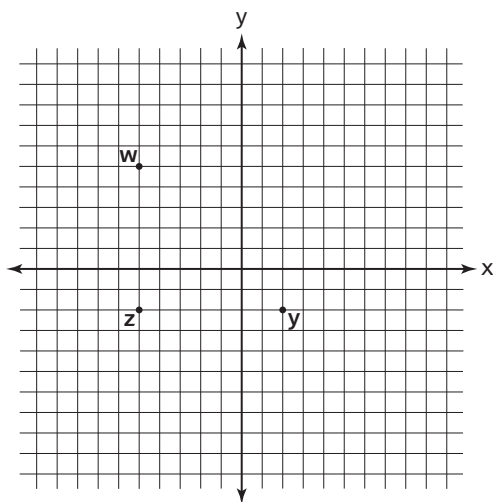
$$5 = c$$

So the total length along the roof is

$$1 + x + x + 1 = 1 + 5 + 5 + 1 = 12 \text{ feet}$$

You may be given a coordinate graph similar to this followed by a problem in which you will need to **grid your answer on the coordinate plane grid** on your answer sheet.

- 32.** Three vertices of the square WXYZ are shown on the graph below.



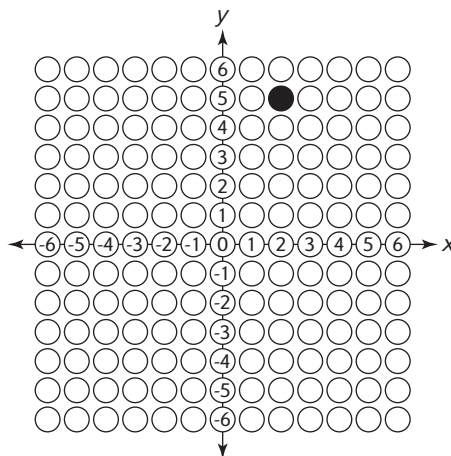
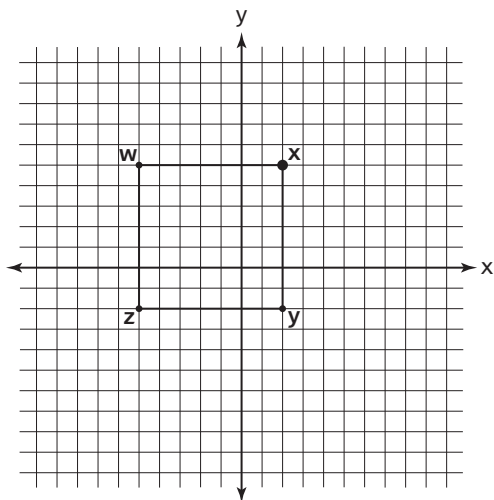
What is the location of the point X, the second vertex of the square?

**DO NOT MARK YOUR ANSWER ON THE GRAPH ABOVE.**

Mark your answer on the coordinate plane grid on your answer sheet.

You could simply complete the square and note the placement of point X. Carefully note the lengths of the sides of the square. Graph point X accurately and carefully.

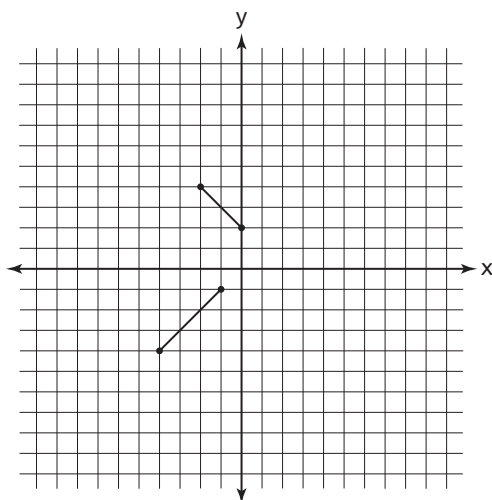
Now grid your answer.





The following is another example of gridding your answer on a coordinate plane grid.

- 33.** The coordinate grid below shows parts of the graphs of the linear functions  $y_1 = x$  and  $y_2 = -x + 2$ .



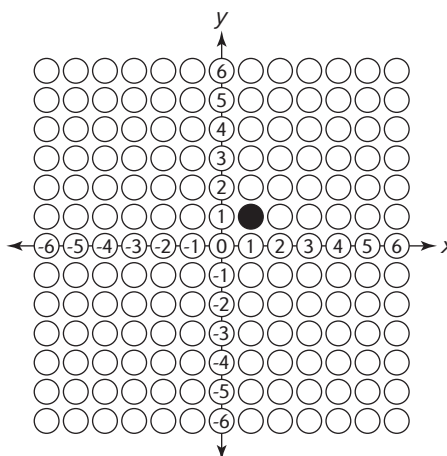
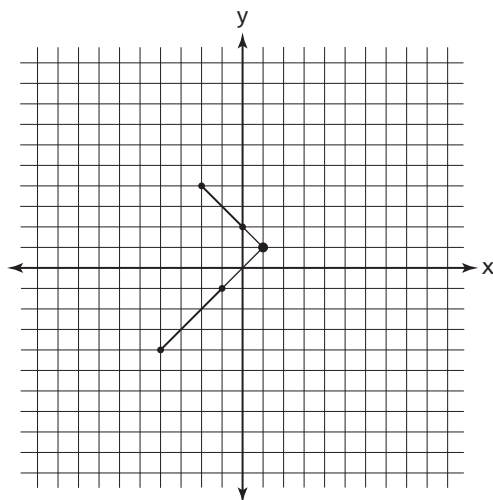
What is the location of the point that is common to the graphs of both equations?

**DO NOT MARK YOUR ANSWER ON THE GRAPH ABOVE.**

Mark your answer on the coordinate plane grid on your answer sheet.

If you simply extend each line, they will intersect at the point  $(1, 1)$ . Notice the slope of the first line is 1, or  $1/1$ , that is, for every 1 move to the right, the line goes 1 up. In the second line, the slope is  $-2/1$ , that is, for every 1 move to the right, the line goes 2 down. On this problem type, be careful to place your answer properly on the  $xy$ -graph.

Now grid your answer.





# Visual Materials: Charts, Graphs, Maps, Cartoons, Diagrams, Pictures, Photographs, and Advertisements

## What to Expect

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The GED Social Studies, Science, and Mathematics Tests will ask many questions involving visual material — charts, graphs, maps, cartoons, diagrams, pictures, photographs, and advertisements.

- ⇒ Expect between 30% and 60% of the questions in those tests to refer to visual material.
- ⇒ Expect some of this visual material to be part of a paragraph or to include other written material.

## Graphs and Charts

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### WHAT YOU SHOULD KNOW

You should know how to do the following:

- Read and understand information given in the form of a graph or chart.
- Analyze and apply information given in a graph or chart.
- Spot trends and predict some future trends.

### WHAT TO LOOK FOR

- Look for trends or changing patterns that might appear in the graph or chart.
- Look for additional information provided by the graph or chart.
- Look for key words and headings in the graph or chart.

### WHAT YOU SHOULD DO

- ☐ Focus on understanding the important information in the graph or chart.
- ☐ Don't memorize the information; refer to it when you need to.
- ☐ Skim the question first. This can be helpful in telling you what to look for.
- ☐ Examine the entire visual aid and all the additional information quickly, but carefully, before starting to work on the question. Make sure that you understand the information given.
- ☐ Read the question and possible choices, and notice the key words. Decide on your answer from the information given.

- ☐ Read and understand the extra information included with a graph or chart (headings, scale factors, legends, etc.). Sometimes you can find the answer in this information.
- ☐ Look for the obvious changes, high points, low points, trends, etc. Obvious information often leads to an answer. Unless you are told otherwise, use only the information given in a graph or chart.

By reviewing the following section, you will become familiar with the basic types of charts and graphs.

## Charts and Tables

Charts and tables are often used to give an organized picture of information or data. Be sure that you understand *what is given*. Column headings and line items give the important information. These titles give the numbers meaning.

You could be given a table involving **mathematics** similar to the one that follows.

*Questions 1 through 4 refer to the following table.*

Burger Sales for the Week of August 8 to August 14		
Day	Hamburgers	Cheeseburgers
Sunday	120	92
Monday	85	80
Tuesday	77	70
Wednesday	74	71
Thursday	75	72
Friday	91	88
Saturday	111	112

1. On which day were the most hamburgers sold?

- (1) Sunday
- (2) Monday
- (3) Thursday
- (4) Friday
- (5) Saturday

The right answer is (1). Pay special attention to the information given in the chart. This table shows the number of “Burger Sales for the Week of August 8 to August 14.” The days of the week are given along the left side of the table. The number of *hamburgers* for each day is given in one column, and the number of *cheeseburgers* in the other column.

To answer this question, you must simply be able to read the table. The most hamburgers (120) were sold on Sunday.

**2.** On which day were the most burgers sold (hamburgers and cheeseburgers)?

- (1) Sunday
- (2) Monday
- (3) Thursday
- (4) Friday
- (5) Saturday

The right answer is **(5)**. To answer this question, you must understand the table and do some simple computation.

Working from the answers is probably the easiest method.

- |              |                               |
|--------------|-------------------------------|
| (1) Sunday   | $120 + 92 = 212$              |
| (2) Monday   | $85 + 80 = 165$               |
| (3) Thursday | $75 + 72 = 147$               |
| (4) Friday   | $91 + 88 = 179$               |
| (5) Saturday | $111 + 112 = \underline{223}$ |

Another method is to *approximate* the answer.

**3.** On how many days were more hamburgers sold than cheeseburgers?

- (1) 7
- (2) 6
- (3) 5
- (4) 4
- (5) 3

The right answer is **(2)**. To answer this question, you must compare the sales for each day. Hamburgers outsold cheeseburgers every day except Saturday.

**4.** If the pattern of sales continues,

- (1) the weekend days will have the fewest number of burger sales next week
- (2) cheeseburgers will outsell hamburgers next week
- (3) generally, when hamburger sales go up, cheeseburger sales will go up
- (4) hamburgers will be less expensive than cheeseburgers
- (5) there will be no days on which cheeseburgers outsell hamburgers

The right answer is **(3)**. To answer this question, you must notice one of the trends. On most days that hamburger sales go up, cheeseburger sales also go up (with the exception of Saturday to Sunday).

Question 5 refers to the following table.

Temperature of Objects in Degrees Centigrade	
absolute zero	$-273^{\circ}$
oxygen freezes	$-218^{\circ}$
oxygen liquefies	$-183^{\circ}$
water freezes	$0^{\circ}$
human body	$37^{\circ}$
water boils	$100^{\circ}$
wood fire	$830^{\circ}$
iron melts	$1535^{\circ}$
iron boils	$3000^{\circ}$

**5.** The difference in temperature between the point at which oxygen freezes and the point at which iron melts is

- (1)  $1317^{\circ}$
- (2)  $1535^{\circ}$
- (3)  $1718^{\circ}$
- (4)  $1753^{\circ}$
- (5)  $3218^{\circ}$

The right answer is **(4)**. To answer this question, you must be able to read the chart and do some simple calculation.

The freezing temperature of oxygen is  $-218^{\circ}$  centigrade. Iron melts at  $1535^{\circ}$  centigrade. To find the difference between the two, you must perform subtraction, as follows:

$$1535 - (-218) = 1535 + 218 = 1753$$

A more difficult **social studies** or **mathematics** table might look like the one that follows.

Questions 6 and 7 refer to the following table.

Average Expenditures for Monthly Housing Expenses in 1990

Metropolitan Area	Mortgage Payment	Property Tax	Hazard Insurance	Utility Cost	Total Monthly Expenses
Large					
Chicago	\$291	\$64	\$14	\$60	\$429
Houston	292	48	26	74	439
Los Angeles	403	99	15	50	567
New York	291	111	25	70	497
San Francisco	445	99	20	50	614
Washington	388	85	14	91	578
All U.S. metropolitan areas with populations of 1.5 million or more	\$299	\$70	\$13	\$60	\$442
All of the United States	\$273	\$54	\$13	\$60	\$400

**6.** Which city's total monthly expenses were closest to the total monthly expenses for areas with populations of 1.5 million or more?

- (1) Chicago
- (2) Houston
- (3) New York
- (4) Los Angeles
- (5) Washington

The right answer is **(2)**. First, you must determine the total monthly expenses for all U.S. cities with a population of 1.5 million or more. The last column of the next to last line shows that the number is \$442 per month. The column at the left shows the *area*, and the last column shows the *total monthly expenses*.

Second, you must determine which city's total monthly expenses are closest to the \$442 monthly figure. The correct answer is Houston, which has a monthly expense of \$439.

**7.** You could conclude which of the following statements from information presented in the chart?

- (1) Los Angeles residents have larger incomes than residents in New York.
- (2) The median mortgage payment in Los Angeles is lower than it is in Washington.
- (3) Housing dollars would stretch further in smaller cities.
- (4) Hazard insurance prices increase as total monthly expenses increase.
- (5) It costs more for monthly expenses in Washington, San Francisco, and New York than anywhere else in the country.

The right answer is **(3)**. To answer this question, you must draw a *conclusion* from the information presented in the table.

The information in (1) cannot be determined from the data in the table. (Don't choose as an answer information that is *not presented* in the chart or graph, even if the statement might be based on accepted fact.) You can quickly eliminate (2) because the mortgage payment table shows that the Los Angeles average is \$403, whereas the Washington average is \$388. You can see that (4) is false by looking at the Houston hazard insurance (\$26), the highest in the chart, and Houston's total monthly expenses (\$439), one of the lowest in the chart. Choice (5) is false because *Los Angeles* has the third highest total monthly expenses (\$567).

Notice that the monthly expenses column is *not* in rank order — lowest to highest. The correct answer (3) can be supported by data presented in the chart. Notice that all cities with populations of 1.5 million or more have a total monthly expense figure of \$442. "All of the United States" (the United States considered as a whole) has a total monthly expense of \$400. This means that many small cities reduced the \$442 total monthly figure. So, you can conclude that housing dollars would stretch further in smaller cities.

## Graphs

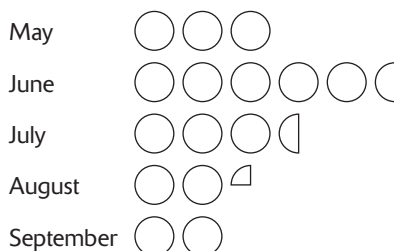
Information can be displayed in many ways. The four basic types of graphs you should know are: *pictographs*, *bar graphs*, *line graphs*, and *circle graphs* (or *pie charts*).

### PICTOGRAPHS

Pictographs use *pictures* to help you see information and make comparisons.

You could be given a **mathematics** pictograph similar to the one that follows.

Questions 8 through 10 refer to the following graph.



During the summer months, Phil works by the beach selling surfboards. Phil decided to chart his sales. Each circle represents \$1,000 in sales.

**8.** Approximately how much money did Phil receive in sales in July?

- (1) \$3,000
- (2) \$3,500
- (3) \$4,000
- (4) \$5,000
- (5) \$5,500



The right answer is **(2)**. To answer this question, you must understand how to read this pictograph.

Because each circle represents \$1,000, each half circle represents \$500. July has  $3\frac{1}{2}$  circles, which equals \$3,500.

**9.** In which month did Phil receive the most money from sales?

- (1) May
- (2) June
- (3) July
- (4) August
- (5) September

The right answer is **(2)**. By scanning the graph, you can see that the longest line is for June. So, the most money from sales came in June.

**10.** Approximately how much more money did Phil receive in his best month than he did in his worst month?

- (1) \$1,500
- (2) \$2,500
- (3) \$3,500
- (4) \$4,500
- (5) \$5,000

The right answer is **(3)**. In Phil's best month, June, he had sales of \$5,500. In his worst month, September, he had sales of \$2,000. Now, you must perform simple subtraction, as follows:

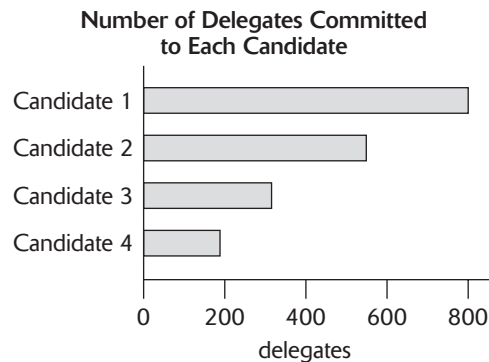
$$\$5,500 - \$2,000 = \$3,500$$

## BAR GRAPHS

Bar graphs convert the information in a chart into separate bars or columns. Some graphs list numbers along one edge and places, dates, people, or things (individual categories) along another edge. Always try to determine the *relationship* between the columns in a graph or chart.

You could be given a **social studies** bar graph similar to the one in the next problem.

Question 11 refers to the following bar graph.



**11.** Candidate 1 has approximately how many more delegates committed than Candidate 2?

- (1) 150
- (2) 200
- (3) 250
- (4) 400
- (5) 500

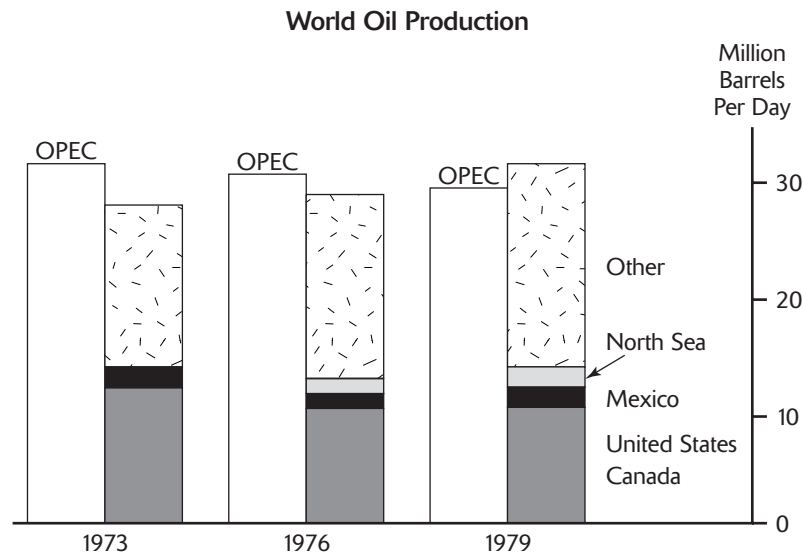
The right answer is **(3)**. To understand this question, you must be able to read the bar graph and make comparisons. Notice that the graph shows the “Number of Delegates Committed to Each Candidate,” with the number given along the bottom of the graph in increases of 200. The names are listed along the left side.

Candidate 1 has approximately 800 delegates (possibly a few more). The bar graph for Candidate 2 stops about three-quarters of the way between 400 and 600. Consider that halfway between 400 and 600 would be 500. So, Candidate 2 is at about 550. To find the correct answer, you must perform simple subtraction, as follows:

$$800 - 550 = 250$$

A more difficult bar graph involving **social studies** could look like the one that follows.

*Questions 12 and 13 refer to the following bar graph.*



**12.** Approximately how much oil was produced by the United States and Canada in 1979?

- (1) 8 million barrels per day
- (2) 11 million barrels per day
- (3) 13 million barrels per day
- (4) 20 million barrels per day
- (5) 33 million barrels per day

The right answer is (2). The bar graph shows the years in the study on the horizontal line along the bottom of the graph (1973–1979). The vertical line at the right shows the number of barrels per day, stated in millions. Note that the vertical line at the right is spaced in increments of 10 million barrels per day (0 to 10, 10 to 20, etc.).

In 1979, the United States and Canada produced approximately 11 million barrels per day.

**13.** Since 1973, the rate of United States and Canada oil production has

- (1) risen sharply
- (2) outpaced OPEC production
- (3) dropped dramatically
- (4) declined gradually
- (5) fluctuated sharply

The right answer is (4). In this question, you are asked to make a conclusion based on the facts (data) presented in the graph. You can see from the graph that the production of U.S. and Canadian oil has declined *slightly* over the 1973–1979 period.

The term *OPEC* refers to the *Organization of Petroleum Exporting Countries*; Saudi Arabia, the world's leading producer of oil, is the most significant member of OPEC. A further question might have asked in which year did OPEC oil production fall behind the total oil production of non-OPEC countries (1979).

## LINE GRAPHS

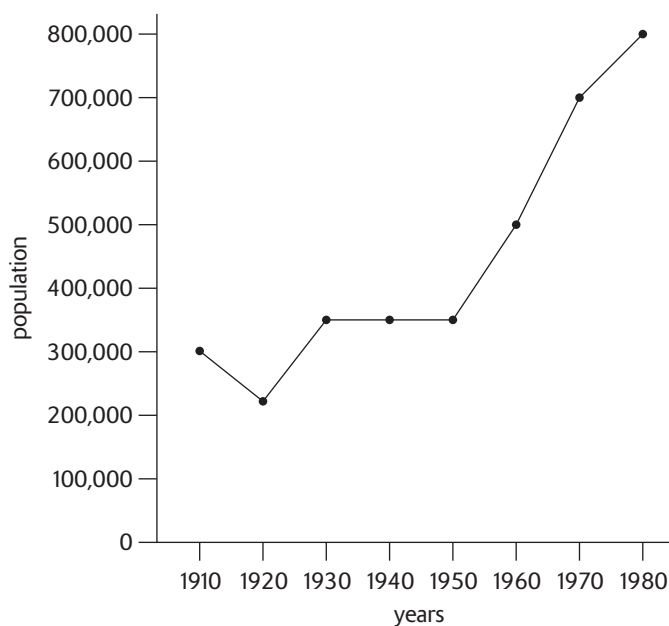
Line graphs convert data into points on a grid. These points then are connected to show a relationship between the items, dates, times, etc.

Notice the slopes on the lines connecting the points. These lines will show increases and decreases. The sharper the slope *upward*, the greater the *increase*. The sharper the slope *downward*, the greater the *decrease*. Line graphs can show trends, or changes, in data over a period of time.

You could be given a line graph involving **social studies** similar to the one that follows.

Questions 14 and 15 refer to the following graph.

Native American Population in the United States from 1910 to 1980



**14.** In which of the following years were there about 500,000 Native Americans?

- (1) 1930
- (2) 1940
- (3) 1950
- (4) 1960
- (5) 1970

The right answer is (4). To answer this question, you must be able to read the graph. The information along the left side of the graph shows the number of Native Americans in increases of 100,000. The bottom of the graph shows the years from 1910 to 1980.

You will notice that in 1960 there were about 500,000 Native Americans in the United States. Using the edge of your answer sheet like a ruler will help you see that the dot in the 1960 column lines up with 500,000 on the left.

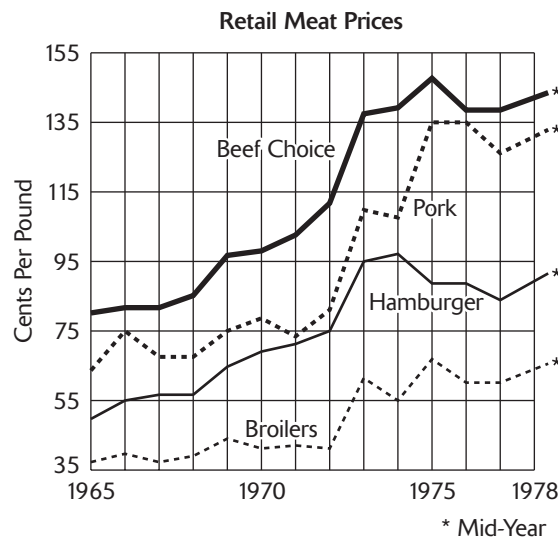
**15.** During which of the following time periods was there a **DECREASE** in the Native American population?

- (1) 1910 to 1920
- (2) 1920 to 1930
- (3) 1930 to 1940
- (4) 1960 to 1970
- (5) 1970 to 1980

The right answer is (1). Because the slope of the line goes *down* from 1910 to 1920, there must have been a decrease. If you read the actual numbers, you will notice a decrease from 300,000 to 250,000.

You could be given a more difficult **mathematics** or **social studies** graph similar to the following.

Questions 16 through 18 refer to the following line graph.



**16.** A pound of hamburger in 1975 costs approximately how much more than it did in 1970?

- (1) 20¢
- (2) 25¢
- (3) 30¢
- (4) 35¢
- (5) 55¢

The right answer is (1). A line graph shows the relationship between two or more items. This question calls for comparing the price of hamburger in 1975 with the price of hamburger in 1970. You are asked to determine the *approximate price increase during the given period*. To answer the question, you must be able to see the difference among the four items listed on the chart.

Notice that the lower horizontal line indicates the time reference, as given in years from 1965 to 1978. Each line extending from it represents a one-year increment. The vertical line on the far left gives the price, or cents per pound (35¢ to \$1.55 per pound). Each line extending from it represents a 20-cent increment (35¢ to 55¢; 55¢ to 75¢; and so forth). In 1975, hamburger sold for slightly more than 85¢ per pound. The price increase from 1970 to 1975 was approximately 20¢ per pound.

**17.** Which of the following is an accurate statement based on the information provided in the chart?

- (1) The figures for mid-year 1978 indicate a downward trend in retail meat prices.
- (2) Pork prices increased more gradually than broiler prices.
- (3) More hamburger was sold than beef choice.
- (4) The figures for mid-year 1978 indicate an increase in retail meat prices.
- (5) The overall retail price of meat declined in the 1970s.

The right answer is (4). To answer this question, you must be able to determine the *one* statement that is consistent with the information provided in the graph.

Mid-year 1978 is shown by the continuation of the lines representing meat prices beyond the 1978 line. Notice that all lines represent an *upward* trend.

Choice (1) does not agree with the data in the chart. Choice (2) asks you to compare two items to see which one showed the most consistent price over the entire period of the study. You should notice that pork prices, especially since 1971, increased more dramatically than broiler prices.

Choice (3) cannot be supported by the information given. (*Do not* read information into the chart.) It should be easy to see that statement (5) is wrong. *All* meat items showed an increase in price over the 1970s. The only statement that agrees with the information is (4). All meat prices, as shown by the mid-year 1978 prices, show a continued increase.

18. If a person purchased 20 pounds of beef choice in 1965, how much more money would it cost the person in 1978 to purchase the same amount of beef choice?

- (1) \$ 12
- (2) \$ 16
- (3) \$ 28
- (4) \$ 80
- (5) \$140

The right answer is (1). You must determine how much *more* money 20 pounds of an item (beef choice) cost over a specific period of time.

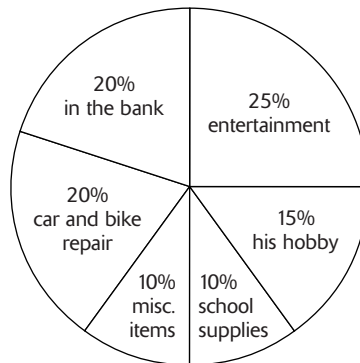
In 1965, beef choice cost approximately 80¢ per pound ( $\$.80 \times 20 = \$16.00$ ). In 1978, beef choice cost approximately \$1.40 per pound ( $\$1.40 \times 20 = \$28.00$ ). The difference is \$12.00 ( $\$28.00 - \$16.00 = \$12.00$ ).

## CIRCLE GRAPHS OR PIE CHARTS

A circle graph, or pie chart, shows the relationship between the whole circle (100%) and the various slices that represent portions of that 100%. The larger the slice, the higher the percentage.

You could be given a circle graph involving **mathematics** similar to the one that follows.

Questions 19 through 21 refer to the following circle graph.



How John Spends His Monthly Paycheck

19. John spends one-quarter of his monthly paycheck on

- (1) his hobby
- (2) car and bike repair
- (3) entertainment
- (4) school supplies
- (5) Not enough information is given.

The right answer is **(3)**. To answer this question, you must be able to read the graph and apply some simple math.

Notice how the information is given in the graph. Each item is given along with the percent of money spent on that item. Because one-quarter is the same as 25%, entertainment is the one you are looking for.

**20.** If John receives \$100 in this month's paycheck, how much will he put in the bank?

- (1) \$ 2
- (2) \$20
- (3) \$35
- (4) \$60
- (5) \$80

The right answer is **(2)**. To answer this question, you must again read the graph carefully and apply some simple math.

John puts 20% of his income in the bank. Twenty percent of \$100 is \$20. So, he will put \$20 in the bank.

**21.** What is the ratio between the amount of money John spends on his hobby to the amount he puts in the bank?

- (1) 1/6
- (2) 1/2
- (3) 5/8
- (4) 2/3
- (5) 3/4

The right answer is **(5)**. To answer this question, you must use the information in the graph to make a ratio.

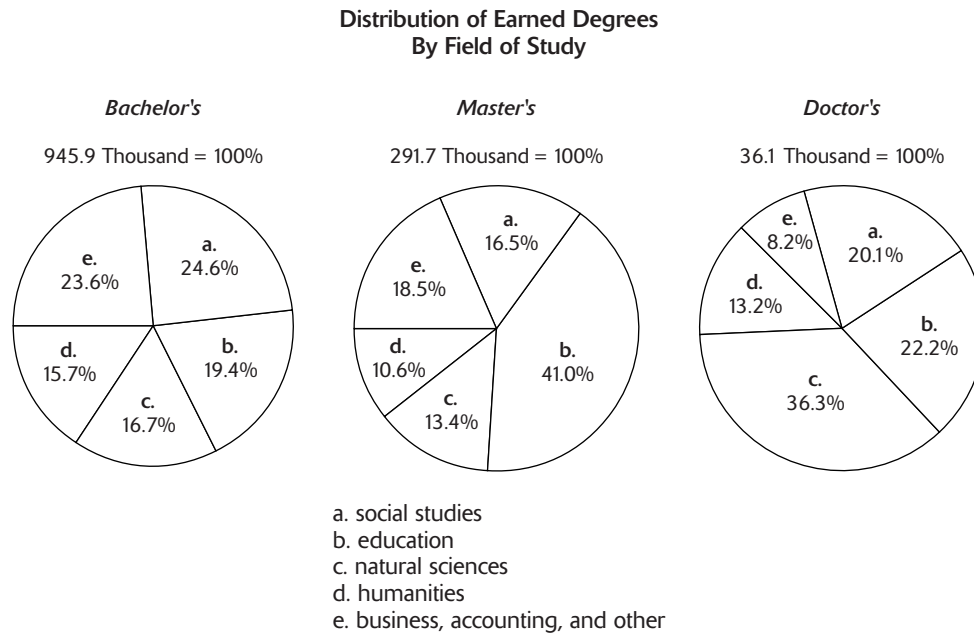
$$\frac{\text{his hobby}}{\text{in the bank}} = \frac{15\%}{20\%} = \frac{15}{20} = \frac{3}{4}$$

Notice that the ratio between 15% and 20% reduces to 3/4.



Sometimes you could be given more than one circle graph. A more difficult **social studies** or **mathematics** problem could look like the following:

Questions 22 and 23 refer to the following pie charts.



**22.** Which field of study issued the fewest master's degrees?

- (1) social sciences
- (2) education
- (3) natural sciences
- (4) the humanities
- (5) business, accounting, and other

The right answer is **(4)**. Remember that a circle graph, or pie chart, shows the relationship between the whole circle (100%) and the slices, or parts, of that 100%. The larger the slice, the higher the percentage.

A circle graph makes it easy to see the relationship between the parts that make up the total graph. Two or more circle graphs can be used in the same example to show many relationships.

In this question, you must find the field of study that issued the *fewest* number of *master's* degrees. You can see that the humanities, which has issued 10.6% of the total number of degrees, is the correct answer.

Notice that with the data given, you could have calculated the *number* of master's degrees earned in the humanities, although to answer this question you do not need to. 291.7 thousand is equal to 100% (see the information above the circle graph); therefore 10.6% of 291,700 would be approximately 30,920 degrees earned. You could calculate this information for each segment of the pie chart.

**23.** In comparing bachelor's degrees to doctor's degrees, which field of study shows the greatest percentage of change?

- (1) social sciences
- (2) education
- (3) natural sciences
- (4) the humanities
- (5) business, accounting, and other

The right answer is (3). To answer this question, you must compare total *percentage changes*. If the question had asked you to find the *negative* percentage change (percentage loss), the correct answer would have been (5). (Business showed a 15% reduction in earned degrees.)

From the chart, you can see that choices (3) and (5) show the greatest percentage change. Choice (3) shows approximately a 20% change, whereas choice (5) shows approximately a 15% change.

## Maps

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### WHAT YOU SHOULD KNOW

A map can represent either all or part of the Earth's surface. Maps usually are classified into the following four general types:

- **Political maps** — These maps show information relating to government, politics, and political parties.
- **Special-purpose maps** — These maps show information relating to products, vegetation, minerals, population, transportation, and so forth.
- **Physical maps** — These maps show information relating to the Earth's surface, climate, and currents.
- **Relief maps** — These maps show the shape of the land.

### WHAT TO LOOK FOR

Geographic factors to be considered in maps:

- Location of the event
- Size of the area involved

- Geographic relationship of the area to other concerned places (How far apart are the places? In which direction?)
- Important water areas
- Means of access to the area (How can one get to the area?)
- Physical factors, such as mountains and plains
- Natural resources that might play a part
- Soil, climate, and rainfall

**Human factors to be considered in maps:**

- Industries in the area
- Trade and other relations with the outside world
- Available means of transportation
- Size and location of the population
- Large cities concerned in the event
- Racial, religious, and other factors involved
- Historical developments

**WHAT YOU SHOULD DO**

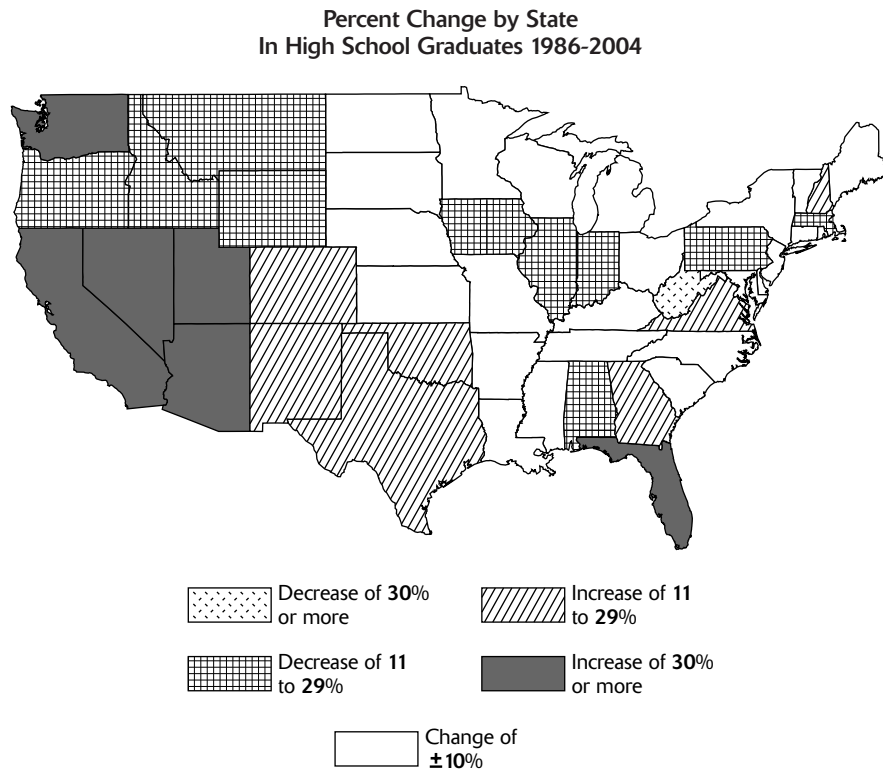
- ☐ To understand a map, you must first become familiar with the information presented on the map.

For instance, the **title**, **legend**, **scale**, **direction**, **longitude**, and **latitude** are all important factors to interpret when looking at a map. The legend is particularly important, because it usually explains the **symbols** used on a map.

- ☐ Notice the main points of the map first, and then look at the finer details.

You could be given a map of the United States, similar to the one in the next problem, which involves **social studies** or **mathematics**.

*Questions 24 and 25 refer to the following map.*



The map uses different shadings to show how the percentage of high school graduates will increase or decrease in each state in an 18-year period.

**24.** According to the map, which of the following will occur in the most states?

- (1) a decrease of 30% or more
- (2) a decrease of 11% to 29%
- (3) a change of about 10%
- (4) an increase of 11% to 29%
- (5) an increase of 30% or more

The right answer is **(3)**. To answer this question, you must understand the map and the legend given.

The legend, or key, at the bottom of the map shows what each different type of shading stands for. Read this information carefully. Now simply count the number of states that have the same type of shading. You may have noticed that most of the states had no shading, so most states had a change of about 10%.

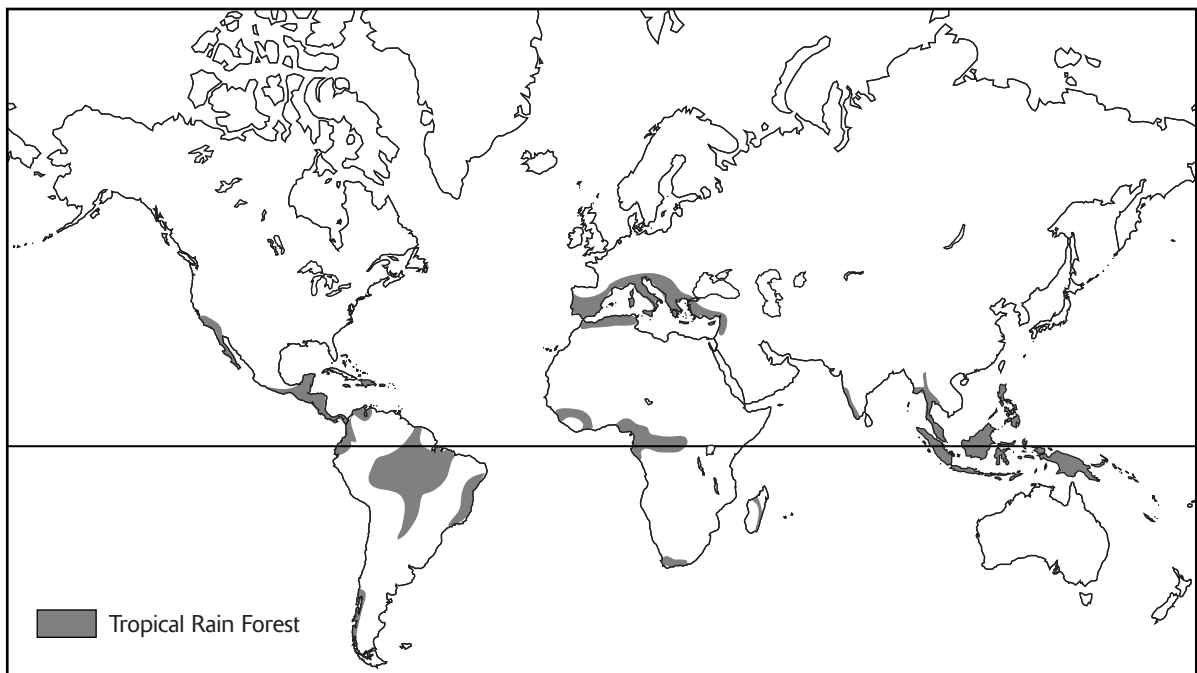
**25.** According to the map, generally the greatest increase is expected in the

- (1) Northeast
- (2) Southeast
- (3) Midwest
- (4) Northwest
- (5) Southwest

The right answer is **(5)**. The dark shading reflects the greatest increase. Most of the dark shading occurs in the lower left-hand corner of the map — the Southwest. If you are looking for trends, you might immediately notice that most states with large increases were in the Southwest.

You could be given a world map involving **science** or **social studies** similar to the one that follows.

*Question 26 refers to the following map.*



The map above shows the tropical rain forests of the world.

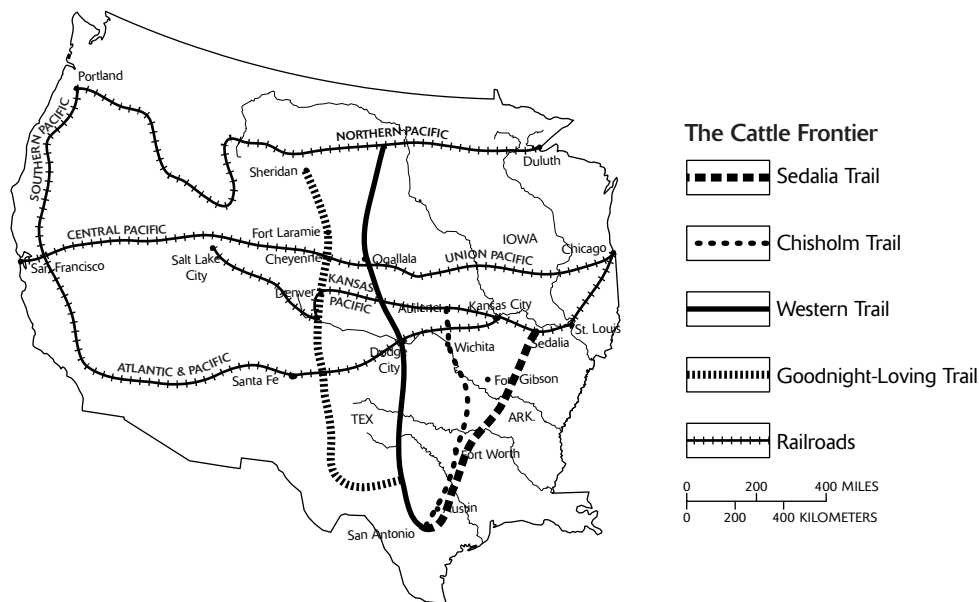
**26.** Which of the following continents has the largest tropical rain forest area?

- (1) North America
- (2) South America
- (3) Africa
- (4) Europe
- (5) Asia

The right answer is **(2)**. To answer this question, you must understand the legend and know some of the continents. The dark shading represents tropical rain forests, so notice where most of this dark shading occurs. South America has the greatest amount of dark shading.

A slightly more complex map involving **social studies** could look like this.

*Questions 27 refers to the following map.*



- 27.** If you were to leave St. Louis with a final destination of Portland, which of the following would be the most logical route?
- Go by rail to Chicago; go by rail to Ogallala; go by trail to the Northern Pacific rail connection; proceed by rail to Portland.
  - Go by rail to Santa Fe; connect by rail with the Atlantic & Pacific and Southern Pacific; proceed by rail to Portland.
  - Go by rail to Chicago; go by rail to the Central Pacific and Southern Pacific connection; proceed by rail to Portland.
  - Go by rail to Denver; go by trail to connect with the Central Pacific; proceed by rail to Portland.
  - Go by rail to Sedalia; go by trail to the Atlantic & Pacific connection at Santa Fe; proceed by rail to Portland.

The right answer is **(3)**. You can quickly eliminate **(1)**, **(4)**, and **(5)** because they use trails to connect with various railroads. Using a trail with unpredictable road conditions and traveling by wagon would be far slower than traveling by a longer rail route. Choice **(3)** is the most direct rail route to Portland. You should look for the shortest route before eliminating each possible answer.

# Cartoons

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## WHAT YOU SHOULD KNOW

A political cartoon can be

- A funny picture of **people**
- A funny picture of **places**
- A funny picture of **things**

A political cartoon is used either to make a special point or to make fun of some subject of popular interest.

## WHAT TO LOOK FOR

- Look for the **current event** used in the cartoon.
- Look for the **point of view** of the political cartoonist. What is the cartoonist trying to say? Remember, most good political cartoonists are often critics who comment on the social issues that face the United States and the world.

## WHAT YOU SHOULD DO

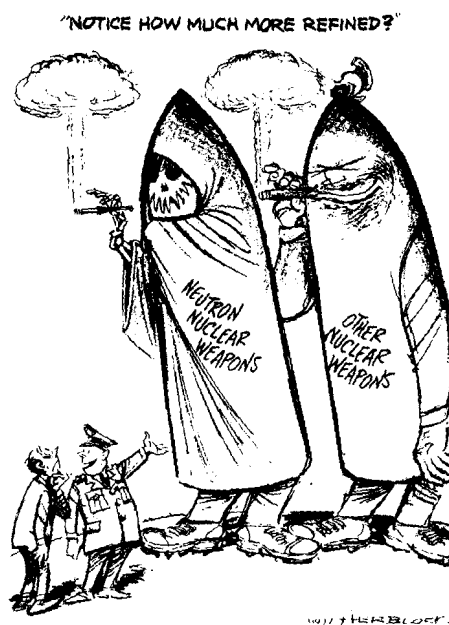
- ☐ Become familiar with the symbols used in political cartoons.

For instance, the “donkey” represents the Democratic Party; the “elephant” is a symbol of the Republican Party; the “dove” is a symbol of peace; the “hawk” is a symbol of war; and “Washington D.C.” and “Uncle Sam” are symbols of the United States government.

- ☐ Try to understand the meaning of the statement that goes with the political cartoon. This statement is often a clue to the cartoonist’s attitude.

You could be given a **social studies** cartoon similar to the one in the next problem.

*Question 28 refers to the following political cartoon.*



Copyright 1977 by Herb Block in the *Washington Post*.

**28.** How does the cartoonist feel about neutron nuclear weapons?

- (1) The military has been able to develop much larger nuclear weapons.
- (2) Nuclear weapons are necessary if the United States is to maintain the current balance of power with Russia.
- (3) Neutron nuclear weapons are not as deadly as conventional nuclear weapons.
- (4) The military is responsible for developing nuclear weapons.
- (5) Advanced nuclear designs cannot change the deadly nature of nuclear weapons.

The right answer is (5). In this political cartoon, a comparison is drawn between neutron nuclear weapons and non-neutron nuclear weapons. The symbols are clues to the cartoonist's point of view.

Notice that the “refined,” or technologically advanced, neutron bomb still represents death and destruction. The neutron bomb is dressed in the “cloak of death”; the refined cigarette holder still produces a “mushroom cloud.” (A mushroom cloud is a symbol of the destructive nature of the bomb.) The question asked by the military — “Notice how much more refined?” — is an indication that the cartoonist considers refinements in nuclear weapons as nothing but more “sophisticated” killing devices.

In other words, in the cartoonist's point of view, a “refined” nuclear weapon is still a nuclear weapon.



# Diagrams, Pictures, and Photographs

## WHAT YOU SHOULD KNOW

- Sometimes information will be given in a simple diagram, picture or photograph
- Know how to follow and understand the information given in the diagram or picture.

## WHAT TO LOOK FOR

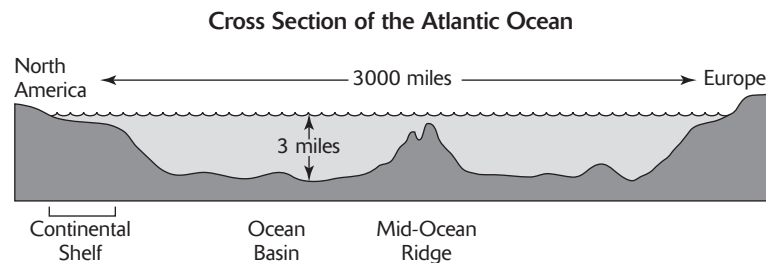
- Look for the main emphasis of the diagram, picture, or photograph. (What is the drawing trying to point out?)
- Look for key words, markings, directions, distances, and so on.
- Look for the obvious and the unusual.

## WHAT YOU SHOULD DO

- ☐ You may wish to skim the question before looking at the diagram, picture, or photograph.
- ☐ Examine the diagram carefully. Make sure you understand the information given.
- ☐ Read any additional information given carefully.
- ☐ Don't try to memorize the diagram, picture, or photograph.
- ☐ Look for clues in the photograph to the place, time, or occurrence shown.

You could be given a **science** diagram similar to the one that follows.

*Question 29 refers to the following diagram.*



**29.** According to the diagram, all of the following are true EXCEPT which of the following?

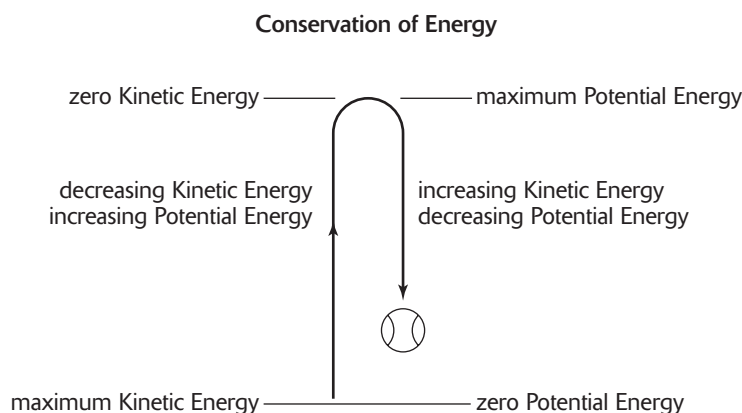
- (1) Europe does not have a continental shelf.
- (2) The mid-ocean ridge is about halfway between the two continents.
- (3) The ocean basin is of fairly consistent depth.
- (4) The mid-ocean ridge is fewer than three miles high.
- (5) The ocean basin and the continental shelf are not of the same depth.

The right answer is **(1)**. To answer this question, you must understand the information given in the diagram. You must also notice that you are looking for what is *not* true.

Choice **(1)**, “Europe does not have a continental shelf,” is *not* true. It does have a continental shelf, although it appears smaller than that of North America. Notice, also, that only the continental shelf of North America is marked in the diagram. You must analyze this diagram to see that this marking is showing *one example*. Notice that the ocean basin is also marked on only one side of the mid-ocean ridge, but there is an ocean basin on the other side. By careful inspection, you will see that all of the other choices are *true*, so you can eliminate them.

A **science** diagram with additional information could look like this.

Questions 30 and 31 refer to the following diagram and information.



The diagram shows how energy is conserved when a baseball is thrown vertically into the air. Its speed upward decreases because gravity is pulling downward. The rising ball loses kinetic energy (slows down) as it gains potential energy (rises higher). At the peak of the ball’s flight, before it starts down, the ball has no kinetic energy but has maximum stored potential energy. As the ball falls, the potential energy is transformed into kinetic energy, and the ball speeds up.

**30.** According to the information, when the ball finally hits the ground, it has

- (1)** no potential energy
- (2)** maximum potential energy
- (3)** no kinetic energy
- (4)** decreasing kinetic energy and increasing potential energy
- (5)** increasing kinetic energy and decreasing potential energy

The right answer is **(1)**. To answer this question, you must understand and follow the diagram.

Read the information carefully and follow the directions of the object. Notice that when the ball hits the ground, it has *zero* potential energy.

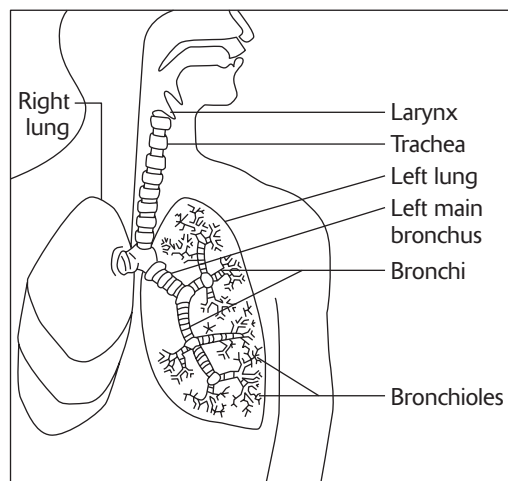
**31.** If the ball is thrown perfectly straight up, at the peak of the ball's flight, the ball

- (1) is moving quickly
- (2) is moving slowly
- (3) has minimum potential energy
- (4) has maximum kinetic energy
- (5) is instantly at rest

The right answer is **(5)**. From the diagram, at the peak of the ball's flight it has zero kinetic energy and maximum potential energy. The ball slows down as it reaches its peak, and then comes to a stop before it starts downward. At this point, you should be able to deduce that the ball is instantly at rest.

You could be given a **science** diagram similar to the one that follows.

Question 32 refers to the following diagram and information.



Air enters the body through the nose and mouth, and then passes into the throat. Next, it goes into the larynx, and then into the trachea (windpipe). The trachea branches into two main bronchi. Each main bronchus leads to a lung, which also contains many smaller bronchi and bronchioles. Inside the lungs, oxygen enters the bloodstream, while at the same time carbon dioxide leaves the blood and enters the lungs to be breathed out.

**32.** From the information given, which of the following is the path of carbon dioxide as it is exhaled?

- (1) larynx-trachea-main bronchus-bronchi-bronchioles
- (2) bronchioles-bronchi-main bronchus-trachea-larynx
- (3) trachea-larynx-main bronchus-bronchi-bronchioles
- (4) bronchi-larynx-trachea-main bronchus-bronchioles
- (5) bronchioles-bronchi-main bronchus-larynx-trachea

The correct answer is **(2)**. To answer this question, you must understand not only the diagram, but also the additional information given.

By *reversing* the process of air coming *into* the lungs, you will get the path *out* of the lungs. Carbon dioxide is exhaled starting from the bronchioles, to the bronchi, to the main bronchus, to the trachea, to the larynx.

You may be given a **social studies** photograph similar to the one that follows.

Question 33 is based on the following photograph.



**33.** The young African-Americans in this photograph are most likely to be

- (1) slaves dressed in their Sunday best for church
- (2) students at an African-American college in the post–Civil War period
- (3) members of a championship basketball team in the post–Civil War period
- (4) inmates at a southern prison “dressed up” to show northerners how well black convicts were treated
- (5) members of a New Orleans jazz band ready to give a concert

The right answer is **(2)**. To answer this question you need to carefully analyze the photograph paying special attention to the main focus of the photo — the clothing being worn and the clean-cut, dignified appearance.

The question is worded in such a way that you must work from the answer choices given.

You can eliminate choice **(1)**. Since slaves never owned suits of the quality in the photo, they would probably not be dressed in that manner to go to church.

Choice **(2)** is possible, since African-American college students in the post–Civil War period could have been dressed in nicer clothing.

You can eliminate choice **(3)**, since basketball was not created as a sport until the 1890s. Also, a championship basketball team would probably pose in uniform and with a basketball.

You can eliminate choice **(4)**, since southern prisons would never show their black inmates in such a manner.

You can eliminate choice **(5)**, since the members of a jazz band would logically pose with their musical instruments.

The right answer is **(2)**. These students are at Wilberforce University, a college for African-Americans in Ohio.

## Advertisements

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### WHAT YOU SHOULD KNOW

You should know how to

- Read and understand information given in the form of an advertisement.
- Analyze and apply information given in an advertisement.
- Spot the main point, focus, and claims of the advertisement.

### WHAT TO LOOK FOR

- An advertisement is given so that you can refer to it for information. Look for featured items — the most important information given.
- Look for how the item is being promoted.
- Look for secondary information.
- Look for special offers or guarantees.
- Look for disclaimers, cautions, or warnings.

## WHAT YOU SHOULD DO

- ☐ Focus on understanding what the ad is trying to sell.
- ☐ Notice how the ad is put together — what the main points and minor points are, and so on.
- ☐ Don't memorize the information; refer to it when you need to.
- ☐ Sometimes reading the question first can be helpful. This will tell you what to look for.
- ☐ Read the question and possible choices and notice the key words and items mentioned. Decide on your answer from the information given.

You may be given an advertisement similar to the one that follows.

Question 34 refers to the advertisement below.

OCTOBER, 1898

MUNSEY'S MAGAZINE—ADVERTISING SECTION.

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**As to the improved** GRAM-O-PHONE  
ZON-O-PHONE...

**Do not confound it with anything of a similar name or nature**  
**It isn't a "business" machine**  
**You don't "talk into it"**

**Its sole purpose is that of Entertainment—**  
**Reproducing Everything in Speech or Music, with**  
**fidelity to the originals positively marvelous**

Suited alike to Parlor, Lawn, Yacht, or Exhibition Hall. With an ordinary horn it has been heard in every part of the great Metropolitan Opera House, New York. Its cornet solos have been heard two miles.

Our records are **made by experts**, from actual performances of the most celebrated instrumentalists, bands, singers, actors, and orators in the world.

These records, instead of being wax, to be kept in cotton, and handled as if they were egg-shells, are on hard, flat disks which are practically indestructible—the **only permanent records made**.

As a guarantee of authenticity each record (except a few of the earliest ones) is **signed**. Among the records whose genuineness is thus attested by the autographs of their makers are those of

HON. CHAUNCEY M. DEPEW    JOSEPH JEFFERSON  
ADA REHAN    DWIGHT L. MOODY  
JESSIE BARTLETT DAVIS    REV. T. DEWITT TALMAGE  
SOUSA'S BAND, BANDA ROSSA, ETC.



Signed Records by Moody, Depew and Jefferson.


**CAUTION**

The unprecedented popularity of the IMPROVED GRAMOPHONE (ZON-O-PHONE), as a means of entertainment has led to many attempts at imitation, some of which are most unsucceessful; but the principles upon which the GRAMOPHONE is constructed are covered by patents so broad that anything of the same nature approaching it in excellence **must be an infringement**, and as such will be promptly prosecuted.

This applies not only to manufacturers and dealers, but to **USERS**; and, pending suits already brought, the public are warned against purchasing that which may cause them much annoyance.

**Price of the Improved Gramophone (Zon-o-phone) is \$25. Records, 50 cents. For further information, printed matter, etc., address**

**NATIONAL GRAM-O-PHONE CO., 874 Broadway, New York.**



Subscribers to **MUNSEY'S MAGAZINE** can obtain the Zon-o-phone (improved Gramophone) **AT ONCE**, by the payment of \$5 cash and \$3 per month for seven months. The National Gramophone Company agree, if the instrument is not satisfactory, to refund the money, less express charges, if returned immediately.

In answering this advertisement it is desirable that you mention MUNSEY'S MAGAZINE.

**34.** According to the above advertisement, which statement is correct?

- (1) The Gram-O-Phone may be used for recording dictation, music, and speech.
- (2) The records must be kept in cotton padding to prevent breakage.
- (3) Subscribers to *Munsey's Magazine* can get a discount on the price of the Gram-O-Phone.
- (4) The Gram-O-Phone plays music on disk records for the entertainment of the listener.
- (5) Three records may be stacked on the Gram-O-Phone at one time.

The right answer is (4). To answer this question, you must understand what information is given in the advertisement. Because the question is worded “which statement is correct?” you must work from the answer choices. As you look for the best answer, use an elimination strategy, marking out weak or wrong answers.

You can eliminate choice (1), since the ad makes the point of stating that its purpose is entertainment, not business. It is a playback machine, not a recording device.

You can eliminate choice (2), since there is no mention or indication of how the records should be stored.

You can eliminate choice (3). Although the advertisement does mention subscribers to *Munsey's Magazine*, it never mentions a discount price.

You can eliminate choice (5). There is no written mention or pictured indication that three records may be stacked, even though three records are being held by hand in the ad.





## **PART III**

# **HOW TO START REVIEWING**

The following section will show you how to review for each of the GED tests. The section will help you focus your review by pointing out basic key questions. Knowing how to focus your review will make your study time much more effective.



# Language Arts, Writing —

## Part I: Multiple Choice

In Part I, the multiple-choice section, 30 percent of the questions will ask you to recognize errors in *sentence structure*, 30 percent will test *usage*, 25 percent will test *mechanics*, and 15 percent will test *organization*. The following right-hand pages will give you a chance to practice spotting common errors. After you read and answer the questions on each page, turn the page to find answers and explanations. Notice that on these answer pages, you will see the *correct* sentences in **bold type**.

## Sentence Structure Errors

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### SENTENCE FRAGMENTS

The most common sentence structure errors are *sentence fragments*, that is, sentences that do *not* have both a subject and a main verb. Can you recognize which of the following examples are fragments and which are complete sentences?

1. Dave forgetting to put his lunch in the car.
2. Leaving his wallet on the table in the kitchen.
3. Dave left his lunch at home.
4. The forgotten lunch on the table in the kitchen.

### COMMA SPLICES AND RUN-ON SENTENCES

Putting together two sentences without using the right punctuation can lead to two other sentence structure errors, the *comma splice* (using a comma instead of a conjunction like “and”) and the *run-on sentence* (a sentence with a necessary conjunction left out). Which of the following sentences are incorrect, and what is the error?

5. Dave forgot to put his lunch in the car, he left it on the table.
6. Dave forgot his lunch he left it on the table.
7. Dave forgot his lunch and left it on the table.
8. Dave left his lunch on the table.

## SENTENCE FRAGMENTS

1. Dave forgetting to put his lunch in the car. (sentence fragment)

**Dave forgot to put his lunch in the car.** (complete sentence)

2. Leaving his wallet on the table in the kitchen. (sentence fragment)

**He left his wallet on the table in the kitchen.** (complete sentence)

3. Dave left his lunch at home. (complete sentence)

4. The forgotten lunch on the table in the kitchen. (sentence fragment)

**The lunch was forgotten on the table in the kitchen.** (complete sentence)

## COMMA SPLICES AND RUN-ON SENTENCES

5. Dave forgot to put his lunch in the car, he left it on the table. (incorrect sentence, comma splice error)

**Dave forgot to put his lunch in the car, and he left it on the table.** (correct sentence)

6. Dave forgot his lunch he left it on the table. (incorrect sentence, run-on sentence)

**Dave forgot his lunch, and he left it on the table.** (correct sentence)

7. Dave forgot his lunch and left it on the table. (correct sentence)

8. Dave left his lunch on the table. (correct sentence)

**CONJUNCTION ERRORS**

*Conjunction errors* (errors of faulty coordination) may also be tested. Which of the following sentences is correct?

9. Dave forgot his lunch but left it on the table.

10. Dave forgot his lunch and left it on the table.

**DANGLING MODIFIERS AND PARALLELISM ERRORS**

*Dangling modifiers* and *parallelism errors* are also mistakes of sentence structure. Which of the following are examples of these errors?

11. Having left his wallet at home, Dave would not pay for lunch.

12. Having left his wallet at home, the lunch bill was not paid.

13. Leaving his lunch on the kitchen table and having left his wallet in the bedroom, Dave could not have lunch.

14. Having left his lunch on the kitchen table and his wallet in the bedroom, Dave could not have lunch.

## CONJUNCTION ERRORS

9. Dave forgot his lunch but left it on the table.  
(incorrect conjunction — *But* should be replaced by *and* because the meaning of *and* makes sense in this sentence.)
10. **Dave forgot his lunch and left it on the table.** (correct sentence)

## DANGLING MODIFIERS AND PARALLELISM ERRORS

11. **Having left his wallet at home, Dave would not pay for his lunch.** (correct sentence)
12. Having left his wallet at home, the lunch bill was not paid.  
(incorrect sentence, dangling modifier — This sentence makes it seem as though the *lunch bill* left the wallet at home.)
- Dave could not pay the lunch bill because he left his wallet at home.** (correct sentence)
13. Leaving his lunch on the kitchen table and having left his wallet in the bedroom, Dave could not have lunch.  
(parallelism error — To be parallel the two verbs should both be *having left* or one verb should be used for both *lunch* and *wallet*.)
14. **Having left his lunch on the kitchen table and his wallet in the bedroom, Dave could not have lunch.** (correct sentence)

## Usage Errors

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The most frequent errors of usage tested are errors of *agreement*, of *verb tense*, and of *pronoun reference*.

### SUBJECT/VERB AGREEMENT ERRORS

The largest number of agreement errors will be in sentences that use either a singular subject and a plural verb or a plural subject and a singular verb. All but one of the following sentences contain errors of agreement. Which is the *correct* sentence and what are the errors in the other sentences?

- 15. Dave and Jane is coming to dinner.
- 16. Vince, like his father and uncle, are more than six feet tall.
- 17. The author of books on tennis, ping-pong, and squash are speaking this afternoon.
- 18. Neither Vince nor Wendy is at the party.
- 19. Neither Jane nor Dave are at the party.

### PRONOUN AGREEMENT ERRORS

- 20. The twins arrived late, and she was the first to leave.
- 21. Jane loaned Dave the money, and they paid it back this week.

## SUBJECT/VERB AGREEMENT ERRORS

15. Dave and Jane is coming to dinner.  
(incorrect sentence, plural subject *Dave* and *Jane* with singular verb *is*)

**Dave and Jane are coming to dinner.** (correct sentence)

16. Vince, like his father and uncle, are more than six feet tall.  
(incorrect sentence, singular subject *Vince* with plural verb *are*)

**Vince, like his father and uncle, is more than six feet tall.** (correct sentence)

17. The author of books on tennis, ping-pong, and squash are speaking this afternoon.  
(incorrect sentence, singular subject *author* with plural verb *are*)

**The author of books on tennis, ping-pong, and squash is speaking this afternoon.**  
(correct sentence)

18. Neither Vince nor Wendy is at the party. (correct sentence)

19. Neither Jane nor Dave are at the party.  
(incorrect sentence — After *either/or* or *neither/nor*, the verb should agree with the word following *or* or *nor*.)

**Neither Jane nor Dave is at the party.** (correct sentence)

## PRONOUN AGREEMENT ERRORS

20. The twins arrived late, and she was the first to leave.  
(incorrect sentence, plural noun *twins* with singular pronoun *she*)

**The twins arrived late, and they were the first to leave.** (correct sentence)

21. Jane loaned Dave the money, and they paid it back this week.  
(incorrect sentence — The word *they* doesn't make sense in this sentence.)

**Jane loaned Dave the money, and he paid it back this week.** (correct sentence)



## VERB TENSE ERRORS

Verb tense errors include using a tense that is not the same as other verb tenses in the sentence or the paragraph. A verb tense error can also be caused by using a tense that does not agree with the sense of the information about the time of the action elsewhere in the sentence or the paragraph. Which of the following sentences contain verbs with errors of verb form or verb tense?

- 22. Yesterday, Jack goes to school.
- 23. Jack got up early, eats his breakfast, and left for work.
- 24. Jack got up early, ate his breakfast, and leaving for work.

**Be sure that the verb tenses are the same throughout the sentences *and* the whole paragraph. At least one question will test verb tense agreement in the whole paragraph.**

## OTHER PRONOUN ERRORS

Other pronoun errors tested include using the wrong *relative pronoun* (*which* for *who*, for example) and *pronoun shifts* (using both *one* and *you* to refer to the same person in a single sentence or a paragraph). Which of the following sentences is correct?

- 25. The car that I bought is red.
- 26. My sister which lives in Toledo is a doctor.
- 27. One should lock your car securely, and you should not leave packages on the back seat.

There will also be sentences with *pronouns* that are either *vague* or that make the person referred to by the pronoun *not clear*. Which of the following sentences have this sort of pronoun error?

- 28. He argued with his parents and with his in-laws, and so they avoided him.
- 29. Dave gave Ed his keys.

## VERB TENSE ERRORS

- 22.** Yesterday, Jack goes to school.

(incorrect sentence, *yesterday* (past) with *goes* (present))

- 23.** Jack got up early, eats his breakfast, and left for work.

(incorrect sentence, *got up* (past), *eats* (present), *left* (past))

**Jack got up early, ate his breakfast, and left for work.** (correct sentence)

- 24.** Jack got up early, ate his breakfast, and leaving for work.

(incorrect sentence, *got* (past), *ate* (past), *leaving* (present))

**Jack got up early, ate his breakfast, and left for work.** (correct sentence)

## OTHER PRONOUN ERRORS

- 25.** The car that I bought is red. (correct sentence)

- 26.** My sister which lives in Toledo is a doctor. (incorrect sentence, *which* used to refer to a person)

**My sister who lives in Toledo is a doctor.** (correct sentence)

- 27.** One should lock your car securely, and you should not leave packages on the back seat. (incorrect sentence, both *one* and *you* are used to refer to the same person)

**You should lock your car securely, and you should not leave packages on the back seat.** (correct sentence)

- 28.** He argued with his parents and with his in-laws, and so they avoided him. (correct sentence)

While you don't know the name of the person who argued with his parents, the sentence is clear.

- 29.** Dave gave Ed his keys.

(incorrect sentence — This sentence has an unclear pronoun. *His keys* could be Dave's keys or Ed's keys.)

## Mechanics

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The test questions on mechanics will involve errors of capitalization, punctuation, and spelling.

### CAPITALIZATION ERRORS

The capitalization questions will require that you understand the correct use of *small and capital letters* with dates, places, times, titles, and proper nouns and adjectives. Can you supply all of the correct capital letters in the following sentences?

- 30.** senator Arthur smith of illinois was married to congresswoman martha jones of indiana on april third. They spent the spring in france where mrs. Smith continued her french studies. They now live on massachusetts avenue in washington, d.c.

### PUNCTUATION ERRORS

The punctuation questions focus particularly on the use of the comma. Can you supply all the necessary commas in the following sentences?

- 31.** After eating breakfast Dave wanted to leave but Jane his wife had not finished her packing. When he realized they could not go at once he poured another cup of coffee added sugar and opened the newspaper.

## CAPITALIZATION ERRORS

- 30.** senator Arthur smith of illinois was married to congresswoman martha jones of indiana on april third. They spent the spring in france where mrs. Smith continued her french studies. They now live on massachusetts avenue in washington, d.c. (incorrect capitalization)

Senator Arthur Smith of Illinois was married to Congresswoman Martha Jones of Indiana on April third. They spent the spring in France where Mrs. Smith continued her French studies. They now live on Massachusetts Avenue in Washington, D.C. (correct capitalization)

## PUNCTUATION ERRORS

- 31.** After eating breakfast Dave wanted to leave but Jane his wife had not finished her packing. When he realized they could not go at once he poured another cup of coffee added sugar and opened the newspaper. (needed commas missing)

After eating breakfast, Dave wanted to leave, but Jane, his wife, had not finished her packing. When he realized they could not go at once, he poured another cup of coffee, added sugar, and opened the newspaper. (correct comma use)

## SPELLING ERRORS

The spelling errors will be chosen from errors in the spelling of possessives, contractions, and homonyms (“sound-alike”) words. Here are some examples of each.

### Possessives

Possessives show ownership. Can you find the words in the following sentence that *should* be possessives but *aren’t*?

32. The students exams were given at they’re regular buildings annex, but it’s windows were closed and the thermometers reading climbed to over 100 degrees.

### Contractions

Contractions combine two words, leaving out a letter or letters and replacing them with an apostrophe. Can you find the words in the following sentence that *should* be contractions but *aren’t*?

33. Dont you have Mrs. Pringle’s wilderness class thats held only if its not raining?

### Homonyms

Homonyms are “sound-alike” words. They may be contractions and possessives as mentioned above, or they may be other words that sound like one another but have different spellings and meanings. Can you replace the incorrect homonyms in the following sentence with the correct ones?

34. I here theirs going to be a big fireworks display; the hole sky will be lit up.

## SPELLING ERRORS

- 32.** The students exams were given at they're regular buildings annex, but it's windows were closed and the thermometers reading climbed to over 100 degrees. (possessives not used)

The **students'** exams were given at **their** regular **building's** annex, but **its** windows were closed and the **thermometer's** reading climbed to over 100 degrees. (correct possessives used)

- 33.** Dont you have Mrs. Pringle's wilderness class thats held only if its not raining? (contractions not used)

**Don't** you have Mrs. Pringle's wilderness class **that's** held only if **it's** not raining? (correct contractions used)

- 34.** I here theirs going to be a big fireworks display; the hole sky will be lit up. (incorrect homonyms)

I **hear there's** going to be a big fireworks display; the **whole** sky will be lit up. (correct homonyms)

## ORGANIZATION

The test questions on organization may involve adding, removing, or moving sentences; making new paragraphs or combining paragraphs; or other revisions that improve the clearness of a document. It's easiest to understand organization questions within the context of a whole document, because that's what they deal with. The practice tests give examples and full explanations of these types of questions. But here are two examples of problems in organization, each involving just one short paragraph.

### Adding, Removing, or Moving Sentences

In the following paragraph, there's one sentence that doesn't logically belong. Can you identify that sentence?

- 35.** (1) Dogs make excellent pets. (2) They are always there to love you, no matter who you are or how you behave. (3) They are smart and fit right in with whatever rules or schedules you might have in your household. (4) Cats make excellent pets as well. (5) You can get a small dog if you have to keep it in an apartment or a large dog if you have a yard for it to run in or don't mind frequently taking it out for walks. (6) You should choose a dog with a temperament to match your lifestyle — a quiet dog if you're a sedentary person, or an active dog if you're interested in a lot of physical activity.

### Making New Paragraphs or Combining Paragraphs

In the following paragraph, one sentence could logically begin a new paragraph. Can you identify that sentence?

- 36.** (1) The short-term weather report calls for partly cloudy skies on Sunday, Monday, and Tuesday. (2) There's a 40-percent chance of showers on Wednesday, but Thursday and Friday look like good bets for outside activity because the temperatures will be in the seventies and skies will be sunny. (3) So these are good days to plan picnics or yard work. (4) The long-term report suggests the month will have less precipitation than normal, and the heat index may rise dangerously. (5) By the end of the month, however, temperatures should moderate to a more seasonal level.

## ORGANIZATION

### Adding, Removing, or Moving Sentences

The sentence that doesn't logically belong in this paragraph is shown in bold type.

35. (1) Dogs make excellent pets. (2) They are always there to love you, no matter who you are or how you behave. (3) They are smart and fit right in with whatever rules or schedules you might have in your household. **(4) Cats make excellent pets as well.** (5) You can get a small dog if you have to keep it in an apartment or a large dog if you have a yard for it to run in or don't mind frequently taking it out for walks. (6) You should choose a dog with a temperament to match your lifestyle — a quiet dog if you're a sedentary person, or an active dog if you're interested in a lot of physical activity.

### Making New Paragraphs or Combining Paragraphs

The sentence that could logically begin a new paragraph is shown in bold type.

36. (1) The short-term weather report calls for partly cloudy skies on Sunday, Monday, and Tuesday. (2) There's a 40-percent chance of showers on Wednesday, but Thursday and Friday look like good bets for outside activity because the temperatures will be in the seventies and skies will be sunny. (3) So these are good days to plan picnics or yard work. **(4) The long-term report suggests the month will have less precipitation than normal, and the heat index may rise dangerously.** (5) By the end of the month, however, temperatures should moderate to a more seasonal level.



# Language Arts, Writing — Part II: The Essay

The best way to review for the essay section of the GED Writing Test is to practice the techniques you learned about in Part 2 of this book. Following, you'll find the directions for this part of the exam. Read them through once again. In the pages that follow are several practice topics very similar to the kinds of topics you'll find on the GED. To do your best on the test, follow these steps:

1. Write a practice essay every few days.
2. Use the blank space beneath each topic as scratch paper.
3. Use the two lined sheets provided after each essay topic for your writing. This is the amount of space you'll have on the actual test.
4. Use the checklist that follows each set of lined sheets to evaluate your practice essay.

## LANGUAGE ARTS, WRITING, PART II

### Tests of General Educational Development

#### Essay Directions

Look at the box on the next page. In the box are your assigned topic and the letter of that topic.

You must write on the assigned topic **ONLY**.

Mark the letter of your assigned topic in the appropriate space on your answer sheet booklet. Be certain that all other requested information is properly recorded in your answer sheet booklet.

You will have 45 minutes to write on your assigned essay topic. If you have time remaining in this test period after you complete your essay, you may return to the multiple-choice section. Do not return the Language Arts, Writing Test booklet until you finish both Parts I and II of the Language Arts, Writing Test.

Two evaluators will score your essay according to its overall effectiveness. Their evaluation will be based on the following features:

- well-focused main points;
- clear organization;
- specific development of your ideas
- control of sentence structure, punctuation, grammar, word choice, and spelling.

**REMEMBER, YOU MUST COMPLETE BOTH THE MULTIPLE-CHOICE QUESTIONS (PART 1) AND THE ESSAY (PART II) TO RECEIVE A SCORE ON THE LANGUAGE ARTS, WRITING TEST. To avoid having to repeat both parts of the test, be sure to observe the following rules.**

- Do not leave the pages blank.
- Write legibly in ink so that the evaluators will be able to read your writing.
- Write on the assigned topic. If you write on a topic other than the one assigned, you will not receive a score for the Language Arts, Writing Test.
- Write your essay on the lined pages of the separate answer sheet booklet. Only the writing on these pages will be scored.

**IMPORTANT:**

**The essay that you write is the property of the GED Testing Service (GEDTS) and is considered confidential and secure. GEDTS policy prohibits the return of the essay to you, your family, or any other individual or program. The policy further prohibits you from discussing or publicizing the content of your essay.**

Topic would go here.
----------------------

Part II is a test to determine how well you can use written language to explain your ideas.

In preparing your essay, you should take the following steps.

- Read the **DIRECTIONS** and the **TOPIC** carefully.
- Plan your essay before you write. Use the scratch paper provided to make any notes. These notes will be collected but not scored.
- Before you turn in your essay, reread what you have written and make any changes that will improve your essay.

Your essay should be long enough to develop the topic adequately.

## **Practice Topic A**

It is often said that we should learn from the mistakes of the past.

Identify a mistake that you once made. Write an essay explaining what you learned from that mistake. Use your personal observations, experience, and knowledge to support your essay.



FOR OFFICIAL USE ONLY

READER 1

	0	1	2	3	4	5	6	7
	0	1	2	3	4	5	6	7

SCORE

	1	2	3	4	OFF
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READER 2

	0	1	2	3	4	5	6	7
	0	1	2	3	4	5	6	7

SCORE

	1	2	3	4	OFF
--	---	---	---	---	-----

CHIEF READER

	0	1	2	3	4	5	6	7
	0	1	2	3	4	5	6	7

SCORE

	1	2	3	4	OFF
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Fill in reader  
with correct  
score

READER

1	3
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PLEASE DO NOT WRITE IN THIS AREA



1237373

## Practice Topic A Checklist

The following checklist will help you evaluate your Practice Topic A essay. Circle *yes* if you feel you've done well on that task. Circle *no* if you feel that you need considerable improvement on that task. You might want to have a friend who is a good writer or a teacher fill out this checklist for you.

Did you

1. Focus on the assigned topic? **yes no**
2. Answer the question? **yes no**
3. Give a statement of purpose? **yes no**
4. Flow in an organized way? **yes no**
5. Support your view with specific examples? **yes no**
6. Use correct English? **yes no**
7. Use a varied and precise choice of words? **yes no**
8. Present the essay well (make it neat, easy to read)? **yes no**

## **Practice Topic B**

What is one suggestion that you would like to make to improve our schools?

In your essay, identify that one suggestion and explain the reasons for your choice. Use your personal observations, experience, and knowledge to support your essay.





FOR OFFICIAL USE ONLY

READER 1

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	0	1	2	3	4	5	6	7

SCORE

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READER 2

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	0	1	2	3	4	5	6	7

SCORE

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CHIEF READER

	0	1	2	3	4	5	6	7
	0	1	2	3	4	5	6	7

SCORE

	1	2	3	4	OFF
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Fill in reader  
with correct  
score

READER

1	3
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PLEASE DO NOT WRITE IN THIS AREA



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## Practice Topic B Checklist

The following checklist will help you evaluate your Practice Topic B essay. Circle *yes* if you feel you've done well on that task. Circle *no* if you feel that you need considerable improvement on that task. You might want to have a friend who is a good writer or a teacher fill out this checklist for you.

Did you

1. Focus on the assigned topic? **yes no**
2. Answer the question? **yes no**
3. Give a statement of purpose? **yes no**
4. Flow in an organized way? **yes no**
5. Support your view with specific examples? **yes no**
6. Use correct English? **yes no**
7. Use a varied and precise choice of words? **yes no**
8. Present the essay well (make it neat, easy to read)? **yes no**

## Practice Topic C

What is one event that you feel had a major impact on the course of your life?

Identify an event that had a major impact. Write an essay explaining how and why that event had a major impact on your life. Use your personal observations, experience, and knowledge to support your essay.



FOR OFFICIAL USE ONLY

READER 1

	0	1	2	3	4	5	6	7
	0	1	2	3	4	5	6	7

SCORE

	1	2	3	4	OFF
--	---	---	---	---	-----

READER 2

	0	1	2	3	4	5	6	7
	0	1	2	3	4	5	6	7

SCORE

	1	2	3	4	OFF
--	---	---	---	---	-----

CHIEF READER

	0	1	2	3	4	5	6	7
	0	1	2	3	4	5	6	7

SCORE

	1	2	3	4	OFF
--	---	---	---	---	-----

Fill in reader  
with correct  
score

READER

1	3
---	---

PLEASE DO NOT WRITE IN THIS AREA



1237373

## Practice Topic C Checklist

The following checklist will help you evaluate your Practice Topic C essay. Circle *yes* if you feel you've done well on that task. Circle *no* if you feel that you need considerable improvement on that task. You might want to have a friend who is a good writer or a teacher fill out this checklist for you.

Did you

1. Focus on the assigned topic? **yes no**
2. Answer the question? **yes no**
3. Give a statement of purpose? **yes no**
4. Flow in an organized way? **yes no**
5. Support your view with specific examples? **yes no**
6. Use correct English? **yes no**
7. Use a varied and precise choice of words? **yes no**
8. Present the essay well (make it neat, easy to read)? **yes no**

# Social Studies

Because the Social Studies Test is about 50% reading oriented and about 50% visual material oriented, it is important that you learn to focus your reading. Start your review by doing the following exercises. Continue reviewing by applying the techniques to other social studies readings.

The following right-hand pages will show you a variety of social studies readings and will give you a chance to practice answering questions concerning the main point of a reading and some details of a reading. When you've finished each reading and have answered the two questions that follow, turn the page. You'll find the reading and questions repeated there and the answers given. You'll also find arrows that point to the exact spots in the reading where you can find the answer. Notice that these spots are printed in **bold type**. If you study these examples carefully, you'll learn to quickly find the answers you need in the readings you will see in the GED Social Studies Test.

**When you finish this review, you should carefully review the chapter on visual materials, since about 50% of your test involves visual materials.**

## Social Studies Sample 1

Canals are built to connect natural waterways. The most well-known American canals are probably the Panama Canal and the Erie Canal. By making it possible to sail from the Atlantic Ocean to the Pacific without circling all of South America, the Panama Canal saves thousands of miles on a journey from Miami to San Francisco. Completed in 1825, the Erie Canal connects the Hudson River and Lake Erie. The Suez Canal joins the Red Sea and the Mediterranean.

### Questions

- A. What is the main point in this paragraph?
- B. What examples of natural waterways connected by canals are there in the paragraph?

**Social Studies Sample 1****A. main point**

→ **Canals are built to connect natural waterways.** The most well-known American canals are probably the Panama Canal and the Erie Canal. By making it possible to sail from the **Atlantic Ocean to the Pacific** without circling all of South America, the **Panama Canal** saves thousands of miles on a journey from Miami to San Francisco. Completed in 1825, the **Erie Canal** connects the **Hudson River** and **Lake Erie**. The **Suez Canal** joins the **Red Sea** and the **Mediterranean**.

**B. examples****Questions**

- A. What is the main point in this paragraph?
- B. What examples of natural waterways connected by canals are there in the paragraph?

**Answers**

- A. The first sentence, which tells the purpose of canals, is the main point of the paragraph.
- B. The paragraph gives three examples: the connecting of the Atlantic and Pacific Oceans by the Panama Canal, of the Hudson River and Lake Erie by the Erie Canal, and of the Red Sea and the Mediterranean by the Suez Canal.



## Social Studies Sample 2

What is *Watergate*? It is a large building in Washington, D.C., where the offices of the Democratic National Committee were located. But for most Americans, *Watergate* refers to the political scandal that toppled President Nixon from office. The term *Watergate* became synonymous with the cover-up of illegal activities designed to reelect President Nixon in 1972. Those illegal activities included the use of government agencies to harass political opponents, unlawful wiretaps, campaign financing violations, and burglary. Because of the high-ranking government officials involved in Watergate and the fact that Nixon was forced to resign rather than risk an impeachment trial, many Americans became disillusioned with the federal government.

### Questions

- A. What is the main point in this paragraph?
- B. What kind of a sentence is the first sentence of the paragraph and what does it do?

## Social Studies Sample 2

B. This question is the focus

→ **What is *Watergate*?** It is a large building in Washington, D.C., where the offices of the Democratic National Committee were located. **But for most Americans, *Watergate* refers to the political scandal that toppled President Nixon from office.** The term *Watergate* became synonymous with the cover-up of illegal activities designed to reelect President Nixon in 1972. Those illegal activities included the use of government agencies to harass political opponents, unlawful wiretaps, campaign financing violations, and burglary. Because of the high-ranking government officials involved in Watergate and the fact that Nixon was forced to resign rather than risk an impeachment trial, many Americans became disillusioned with the federal government.

← A. main point

### Questions

- A. What is the main point in this paragraph?
- B. What kind of a sentence is the first sentence of the paragraph and what does it do?

### Answers

- A. The third sentence of the paragraph makes the main point.
- B. The first sentence is a question. The answer to this question is the subject of the whole paragraph.

## Social Studies Sample 3

When a candidate or political party wins an overwhelming victory in an election, it is referred to as a landslide victory. The presidential and congressional election in 1936 is a classic example of a landslide victory. In that election Franklin Delano Roosevelt received 420 electoral votes to Alfred M. Landon's 8, and the Democrats controlled both the House (322 to 103) and the Senate (69 to 25). Johnson's victory over Goldwater and Nixon's over McGovern are also often cited as landslides.

### Questions

- A. What is the main point in this paragraph?
- B. What examples of landslide victories does the paragraph give?

### Social Studies Sample 3

A. main point

→ When a candidate or political party wins an overwhelming victory in an election, it is referred to as a landslide victory.

The presidential and congressional **election in 1936** is a classic example of a landslide victory. In that election Franklin Delano Roosevelt received 420 electoral votes to Alfred M. Landon's 8, and the Democrats controlled both the House (322 to 103) and the Senate (69 to 25). **Johnson's victory over Goldwater** and **Nixon's over McGovern** are also often cited as landslides.

B. examples

#### Questions

- A. What is the main point in this paragraph?
- B. What examples of landslide victories does the paragraph give?

#### Answer

- A. The first sentence, which tells us what landslide victories are, is the main point of the paragraph.
- B. The examples are the election in 1936, Johnson's win over Goldwater, and Nixon's win over McGovern.

## Social Studies Sample 4

How does a capitalist democracy differ from a nation that practices democratic socialism? A capitalist society is characterized by private ownership of property in a competitive free-market and free-price system. In a democratic socialist society, the major means of production are controlled and owned by the government (coal, railroads, health care, broadcasting). Many industries are privately owned, and the forces of supply and demand operate in determining prices and production levels. In democratic socialism, the people have a direct voice in the operation of the government and are able to exert economic pressure to protest policies they disagree with. The difference, then, is the government's greater role as owner in a democratic socialist society.

### Questions

- A. What is the main point in this paragraph?
- B. Who controls the major means of production in a democratic socialist society?

## Social Studies Sample 4

How does a capitalist democracy differ from a nation that practices democratic socialism? A capitalist society is characterized by private ownership of property in a competitive free-market and free-price system. **In a democratic socialist society, the major means of production are controlled and owned by the government** (coal, railroads, health care, broadcasting). Many industries are privately owned, and the forces of supply and demand operate in determining prices and production levels. In democratic socialism, the people have a direct voice in the operation of the government and are able to exert economic pressure to protest policies they disagree with. **The difference, then, is the government's greater role as owner in a democratic socialist society.**

**B. control of production**

**A. main point**

### Questions

- A. What is the main point in this paragraph?
- B. Who controls the major means of production in a democratic socialist society?

### Answers

- A. The last sentence sums up the paragraph. It answers the question of the first sentence.
- B. In a democratic socialist society, the major means of production are controlled by the government.

## Social Studies Sample 5

Though both are social movements organized to change societies, a revolutionary movement differs from a reform movement. Both may espouse goals or programs which give them recognition and meaning. But a reform movement tries to achieve its goals by working within the existing system; a revolutionary movement rejects the current system and seeks to replace it with a new social structure. The civil rights movement, especially the nonviolent policies of Dr. Martin Luther King, Jr., is an example of a social movement working within the system.

### Questions

- A. Which is the summarizing sentence of the paragraph?
- B. What is an example of social movement working within a system?

## Social Studies Sample 5

Though both are social movements organized to change societies, a revolutionary movement differs from a reform movement. Both may espouse goals or programs which give them recognition and meaning. **But a reform movement tries to achieve its goals by working within the existing system; a revolutionary movement rejects the current system and seeks to replace it with a new social structure.** The **civil rights movement**, especially the nonviolent policies of **Dr. Martin Luther King, Jr.**, is an example of a social movement working within the system.

A. main point

B. example

### Questions

- A. Which is the summarizing sentence of the paragraph?
- B. What is an example of a social movement working within a system?

### Answers

- A. The third sentence has the main point of this paragraph.
- B. The civil rights movement, especially the nonviolent policies of Dr. Martin Luther King, Jr., is an example of a social movement working within the system.

**Now that you have completed these exercises, continue reviewing by applying this focused review to other social studies readings.**



# Science

Because the Science Test is about 50% reading oriented and about 50% visual material oriented, it is important that you learn to focus your reading. This focused reading will also help you gain some general knowledge that will be valuable in answering some questions. Start your review by doing the following exercises. Continue reviewing by applying the techniques to other science readings. Remember, reading additional science articles (including those that use visual materials) will help you gain general knowledge in science.

The following right-hand pages will show you a variety of Science Samples and will give you a chance to practice answering questions concerning the main point of a reading and some details of a reading. When you've finished each reading and have answered the two questions that follow, turn the page. You'll find the reading and questions repeated there and the answers given. You'll also find arrows that point to the exact spots in the reading where you can find the answers. Notice that these spots are printed in **bold type**. If you study these examples carefully, you'll learn to quickly find the answers you need in the readings you will see in the GED Science Test.

**When you finish this review, you should carefully review the chapter on visual materials, since about 50% of your test involves visual materials.**

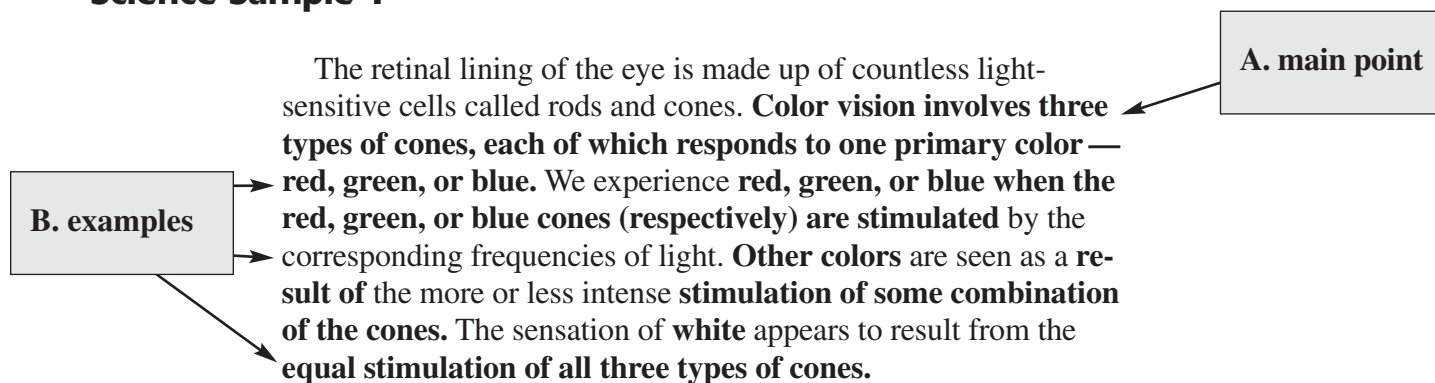
## Science Sample 1

The retinal lining of the eye is made up of countless light-sensitive cells called rods and cones. Color vision involves three types of cones, each of which responds to one primary color—red, green, or blue. We experience red, green, or blue when the red, green, or blue cones (respectively) are stimulated by the corresponding frequencies of light. Other colors are seen as a result of the more or less intense stimulation of some combination of the cones. The sensation of white appears to result from the equal stimulation of all three types of cones.

### Questions

- A. What is the main point in this paragraph?
- B. In which sentence does the author give examples of the experience of color vision?

## Science Sample 1



### Questions

- A. What is the main point in this paragraph?
- B. In which sentence does the author give examples of the experience of color vision?

### Answers

- A. The second sentence describing color vision is the main point in the paragraph.
- B. The third, fourth, and last sentences of the paragraph are examples of the vision of primary colors, of other colors, and of white.

## Science Sample 2

How can the study of fossils support the argument for the gradual development or evolution of life? Evolution of life is indicated by the fact that fossil organisms in rock strata are different from modern organisms. As we go back in time, searching lower and older strata, the organisms diverge more and more from those living today. Yet the variation in life forms appears to be relatively continuous. For example, 60 million years ago horses were quite small and had four toes on each foot. As time passed, horses evolved through a series of larger sizes and fewer toes to today's large, single-toed creature.

### Questions

- A. What is the main point of this paragraph?
- B. What kind of a sentence is the first sentence in this paragraph and what does it do?

## Science Sample 2

**B. question  
answered by  
paragraph**

→ **How can the study of fossils support the argument for the gradual development or evolution of life? Evolution of life is indicated by the fact that fossil organisms in rock strata are different from modern organisms.** As we go back in time, searching lower and older strata, the organisms diverge more and more from those living today. Yet the variation in life forms appears to be relatively continuous. For example, 60 million years ago horses were quite small and had four toes on each foot. As time passed, horses evolved through a series of larger sizes and fewer toes to today's large, single-toed creature.

**A. main point**

### Questions

- A. What is the main point of this paragraph?
- B. What kind of a sentence is the first sentence in this paragraph and what does it do?

### Answers

- A. The second sentence of the paragraph makes the main point.
- B. The first sentence is a question. It asks a question that the rest of the paragraph answers.

### Science Sample 3

In any habitat the various organisms compete for food. The ultimate source of food is photosynthetic plant life. Of the three major habitats, the oceans, fresh water, and land, the oceans have the greatest proportion of living things. The upper layers of the oceans contain microscopic plants collectively called phytoplankton. Through photosynthesis, phytoplankton produce food for the marine life of the depths. Because ocean conditions are relatively uniform, most marine species are broadly distributed. But all of the life in the ocean is ultimately dependent on the photosynthetic plants for existence.

#### Questions

- A. What is the main point of the paragraph?
- B. Which sentence specifically supports the statement that the ultimate source of food is photosynthetic plant life?

### Science Sample 3

A. main point

In any habitat the various organisms compete for food. **The ultimate source of food is photosynthetic plant life.** Of the three major habitats, the oceans, fresh water, and land, the oceans have the greatest proportion of living things. The upper layers of the oceans contain microscopic plants collectively called phytoplankton. Through photosynthesis, phytoplankton produce food for the marine life of the depths. Because ocean conditions are relatively uniform, most marine species are broadly distributed. **But all of the life in the ocean is ultimately dependent on the photosynthetic plants for existence.**

B. supports main point

#### Questions

- A. What is the main point of the paragraph?
- B. Which sentence specifically supports the statement that the ultimate source of food is photosynthetic plant life?

#### Answers

- A. The main point of the paragraph is made in the second sentence, that the ultimate food source is photosynthetic plant life.
- B. The last sentence supports the main idea of the paragraph, giving the ocean habitat as an example.

## Science Sample 4

The geological activity of the wind is usually associated with deserts, where sand dunes are created by the wind. Eddies cause it to raise aloft some fine sediment, but most material is transported just above the surface. The lifting of fine material by wind is called deflation. The bouncing of sand along the ground is referred to as saltation. A reduction in energy and the presence of obstacles cause wind to deposit its load of sediment. Wind deposits include volcanic ash and sand dunes.

### Questions

- A. What is the main point of the paragraph?
- B. How many words associated with the wind's activity does the paragraph define?

## Science Sample 4

A. main point

→ The geological activity of the wind is usually associated with deserts, where sand dunes are created by the wind. Eddies cause it to raise aloft some fine sediment, but most material is transported just above the surface. **The lifting of fine material by wind is called deflation. The bouncing of sand along the ground is referred to as saltation.** A reduction in energy and the presence of obstacles cause wind to deposit its load of sediment. Wind deposits include volcanic ash and sand dunes.

← B. two words defined  
←

### Questions

- A. What is the main point of the paragraph?
- B. How many words associated with the wind's activity does the paragraph define?

### Answers

- A. The first sentence gives the paragraph's main idea.
- B. Two words, "deflation" and "saltation," are defined in the passage.



## Science Sample 5

To produce sound, there must be present both a vibrating source that initiates a mechanical disturbance (wave) and an elastic medium through which the wave can be transmitted. Consider a simple experiment to demonstrate the need for an elastic substance to carry the sound. If an electric buzzer is hung inside a bell jar so that it does not touch the sides of the jar, the sound of the buzzer can be heard when air is inside the jar, because the air transmits the sound waves. As soon as the bell jar is exhausted by a vacuum pump, the sound can no longer be heard because there is no material through which the disturbance can travel. By tilting the evacuated bell jar so that the buzzer touches the wall of the jar, the sound can once again be heard: therefore a solid (the glass of the jar) can carry the sound wave as well as a gas (the initial air). In a second experiment, you could show that a liquid, too, can transmit sound, by ringing a small bell beneath the surface of water in a sink or large pan.

### Questions

- A. What is the main point of the paragraph?
- B. How many experiments to support the explanation of conditions necessary to produce a sound does the paragraph give?

## Science Sample 5

### A. main point

To produce sound, there must be present both a vibrating source that initiates a mechanical disturbance (wave) and an elastic medium through which the wave can be transmitted. Consider a simple experiment to demonstrate the need for an elastic substance to carry the sound. **If an electric buzzer is hung inside a bell jar** so that it does not touch the sides of the jar, the sound of the buzzer can be heard when air is inside the jar, because the air transmits the sound waves. As soon as the bell jar is exhausted by a vacuum pump, the sound can no longer be heard because there is no material through which the disturbance can travel. By tilting the evacuated bell jar so that the buzzer touches the wall of the jar, the sound can once again be heard: therefore a solid (the glass of the jar) can carry the sound wave as well as a gas (the initial air). **In a second experiment**, you could show that a liquid, too, can transmit sound, by **ringing a small bell beneath the surface of water** in a sink or large pan.

### B. two supporting experiments

## Questions

- A. What is the main point of the paragraph?
- B. How many experiments to support the explanation of conditions necessary to produce a sound does the paragraph give?

## Answers

- A. The first sentence defining the two conditions necessary to produce a sound gives the main point.
- B. The paragraph suggests two supporting experiments: one using a bell jar and a second using water in a sink or large pan.

**Now that you have completed these exercises, continue reviewing by applying this focused review to other science readings. Remember, using a focused reading on other science articles will help you gain some of the general knowledge you will need in science.**

# Language Arts, Reading

Because the Interpreting Literature and the Arts Test is based completely on your ability to read and understand, it is important that you learn to focus on your reading. Start your review by doing the following exercises. Then continue your review by applying this focused reading to other works of literature and articles about the arts.

The following right-hand pages will show you a variety of readings on literature and the arts and will give you a chance to practice answering questions concerning the main point of a reading and some details of a reading. When you've finished each reading and have answered the two questions that follow, turn the page. You'll find the reading and questions repeated there and the answers given. You'll also find arrows that point to the exact spots in the reading where you can find the answers. Notice that these spots are printed in **bold type**. If you study these examples carefully, you'll learn to quickly find the answers you need in the readings you will see in the GED Language Arts, Reading Test.

## Language Arts, Reading Sample 1

Even in a country where “highbrows” and “television” are not mutually exclusive terms, Britain’s Channel 4 seemed to be courting disaster. Created in November 1982 as an experimental alternative to the existing networks, its programming caused it to be dubbed “Channel Snore” and “Channel Bore” by early critics. The audience for Channel 4’s nightly newscast was tiny. All that changed. Less than four years later, Channel 4 was British TV’s most heartening success story and a growing presence in the U.S. as well.

### Questions

- A. What is the main point of the paragraph?
- B. Of the five sentences in the paragraph, how many refer to the failure of Channel 4?

## Language Arts, Reading Sample 1

Even in a country where “highbrows” and “television” are not mutually exclusive terms, Britain’s Channel 4 seemed to be **courting disaster**. Created in November 1982 as an experimental alternative to the existing networks, its programming caused it to be dubbed “**Channel Snore**” and “**Channel Bore**” by early critics. The **audience** for Channel 4’s nightly newscast was **tiny**. All that changed. **Less than four years later, Channel 4 was British TV’s most heartening success story and a growing presence in the U.S. as well.**

**B. failures**

**A. main point**

### Questions

- A. What is the main point of this paragraph?
- B. Of the five sentences in the paragraph, how many refer to the failure of Channel 4?

### Answers

- A. The main point of the paragraph is made in the last sentence.
- B. The first three sentences point to the failures of the channel. The fourth sentence says that all “changed,” and the last tells of the channel’s success.

**Language Arts, Reading Sample 2**

She dwelt among the untrodden ways  
Beside the springs of Dove.  
A maid whom there were none to praise  
And very few to love.  
She lived unknown, and few could know  
When Lucy ceased to be.  
But she is in her grave, and oh,  
The difference to me.

**Questions**

- A. What is the main point of this poem?
- B. The poem contrasts the dead girl and the past with the speaker and the present. Which lines deal with the speaker?

## Language Arts, Reading Sample 2

She dwelt among the untrodden ways  
Beside the springs of Dove.  
A maid whom there were none to praise  
And very few to love.  
She lived unknown, and few could know  
When Lucy ceased to be.

**A. main point**

**But she is in her grave, and oh,  
The difference to me.**

**B. lines  
dealing with  
speaker**

### Questions

- A. What is the main point of this poem?
- B. The poem contrasts the dead girl and the past with the speaker and the present. Which lines deal with the speaker?

### Answers

- A. The main point is made in the last two lines in which the speaker tells of his grief.
- B. The first six lines of the poem use verbs in the past tense (dwelt, lived, ceased) to describe Lucy. When the speaker talks of his own feelings in the last two lines of the poem, he uses the present tense.

### Language Arts, Reading Sample 3

“Had silicon been a gas, I would have been a major general,” James Whistler quipped. In 1854, he had been dismissed from West Point for failing chemistry. The following year, he left the United States to study art in Paris. He became one of the most important and certainly one of the most controversial American painters of the last quarter of the nineteenth century. His wit and eccentricities of dress made him a conspicuous figure in London. His painting and his writings on art antagonized the academic painters and England’s leading art critic, John Ruskin. Meanwhile Whistler produced paintings, interior designs, and etchings as well as a number of witty works of prose.

#### Questions

- A. What is the main point of the paragraph?
- B. What sentences support the main point of the paragraph?

## Language Arts, Reading Sample 3

“Had silicon been a gas, I would have been a major general,” James Whistler quipped. In 1854, he had been dismissed from West Point for failing chemistry. The following year, he left the United States to study art in Paris. **He became one of the most important and certainly one of the most controversial American painters of the last quarter of the nineteenth century.** His wit and eccentricities of dress made him a conspicuous figure in London. His painting and his writings on art antagonized the academic painters and England’s leading art critic, John Ruskin. Meanwhile Whistler produced paintings, interior designs, and etchings as well as a number of witty works of prose.

A. main point

B. support  
main point

### Questions

- A. What is the main point of the paragraph?
- B. What sentences support the main point of the paragraph?

### Answers

- A. The main point is the fourth sentence of the paragraph, beginning “He became.”
- B. The last three sentences of the paragraph give evidence of Whistler’s achievements and controversial nature.



**Language Arts, Reading Sample 4**

My mistress' eyes are nothing like the sun;  
Coral is far more red than her lips red;  
If snow be white, why then her breasts are dun;  
If hairs be wires, black wires grow on her head.  
And yet, by heaven, I think my love as rare  
As any she belied with false compare.

**Questions**

- A. What is the main point of the poem?
- B. Poems in praise of a lady's beauty are likely to claim that her eyes are as bright as stars, her lips as red as coral, and her skin as white as snow. In what lines does the poet describe his mistress and how does he describe her?

## Language Arts, Reading Sample 4

My mistress' eyes are **nothing like the sun**;  
**Coral** is **far more red than her lips** red;  
 If snow be white, why then **her breasts are dun**;  
 If hairs be wires, **black wires grow on her head**.  
**And yet, by heaven, I think my love as rare**  
**As any she belied with false compare.**

**A. main point** →

← ← ← ← **B. description**

### Questions

- A.** What is the main point of the poem?
- B.** Poems in praise of a lady's beauty are likely to claim that her eyes are as bright as stars, her lips as red as coral, and her skin as white as snow. In what lines does the poet describe his mistress and how does he describe her?

### Answers

- A.** The main point is made in the last two lines, in which the speaker says his love is as rare as any woman, even those who are lied about by other lovers.
- B.** Lines 1–4 describe the lady, but do so realistically. Her eyes are not like stars or like the sun; her skin is dun colored, not white as snow; and her hair is black, not golden.

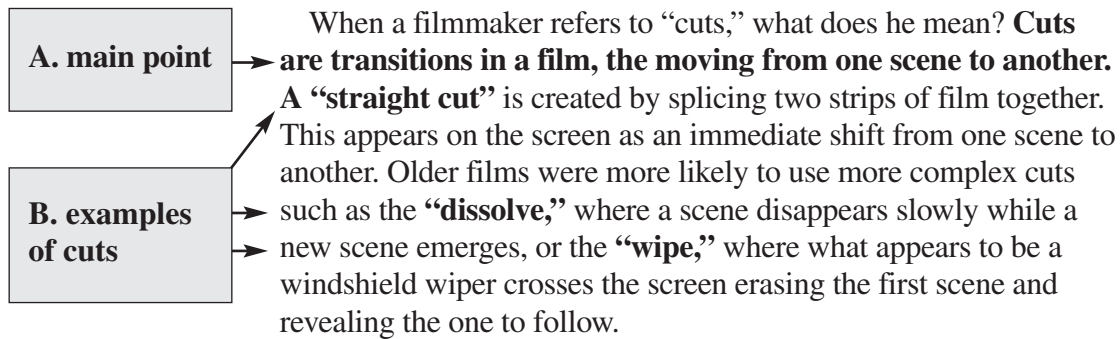
## Language Arts, Reading Sample 5

When a filmmaker refers to “cuts,” what does he mean? Cuts are transitions in a film, the moving from one scene to another. A “straight cut” is created by splicing two strips of film together. This appears on the screen as an immediate shift from one scene to another. Older films were more likely to use more complex cuts such as the “dissolve,” where a scene disappears slowly while a new scene emerges, or the “wipe,” where what appears to be a windshield wiper crosses the screen erasing the first scene and revealing the one to follow.

### Questions

- A. What is the main point of the paragraph?
- B. How many examples of kinds of cuts does the paragraph present?

## Language Arts, Reading Sample 5



### Questions

- A. What is the main point of the paragraph?
- B. How many examples of kinds of cuts does the paragraph present?

### Answers

- A. The second sentence makes the main point of the paragraph.
- B. The paragraph presents three kinds of cuts, the straight cut, the dissolve, and the wipe.

**Now that you have completed these exercises, continue reviewing by applying this focused reading to other works of literature and articles about the arts.**

# Mathematics

Because the Mathematics Test asks you to apply many basic skills in arithmetic, algebra, and geometry, it is important that you first review these basic skills. The following section will help you focus your review.

Start your review by taking the following Review Test. Then move on and check your answers. As you check your answers, notice your strengths and weaknesses. Check the box following each answer for any question for which you had the wrong answer. Continue your review of basics by focusing on the areas that give you the most difficulties.

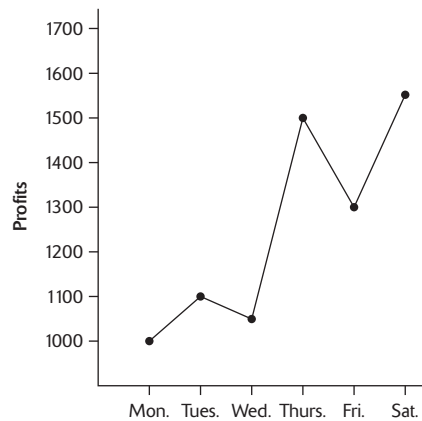
## Review Test

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### ARITHMETIC

1. What is the **perimeter** of a square if one of its sides has a length of 2"?
2. What is the **area** of a rectangle with length 8' and width 3'?
3. If the length of the edge of a cube is 3", what is the **volume** of the cube?
4. If a car travels at 50 mph, how long will it take to travel 400 miles?
5. What is the cost of a bar of soap if the package reads 3 for \$2.07?
6. What is 30% of 20?
7.  $3 + 2(6 + 4) =$
8. Which of the following is the **greatest**?  $\frac{1}{5}$ ,  $\frac{1}{3}$ ,  $\frac{2}{7}$ ,  $\frac{1}{4}$ ,  $\frac{3}{10}$
9. What does .0043 equal in scientific notation?
10.  $3^3 \times 3^4 =$
11. Round 324,170 to the nearest thousand.
12. Find the **mean** and **median** of the following numbers: 9, 8, 4, 7, 8, 6, 9

*Question 13 refers to the following graph.*



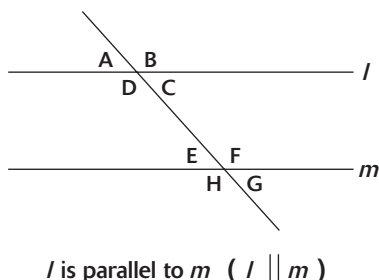
- 13.** In the graph above, the greatest one-day increase in profits was from
- 14.** Tom pours 15 red marbles, 6 blue marbles, and 9 green marbles into a jar. What are the odds of pulling a **green** marble from the jar on the first try?

## ALGEBRA

- 15.** Solve for  $x$ :  $3x + 6 = 2x + 9$
- 16.** “Three less than  $x$ ” can be written in symbols as
- 17.** Solve for  $x$ :  $6x < 12$
- 18.** Evaluate the expression  $7x + 2y^2$  if  $x = 2$  and  $y = 3$ .
- 19.**  $2x(3x - 4) =$
- 20.** Factor completely:  $5x^2 + 10x$
- 21.** Bill’s starting salary was \$24,000 a year. His salary for the next year increased to \$30,000. What was his **percentage increase** in salary?
- 22.** Solve for  $x$ :  $\frac{x}{21} = \frac{3}{7}$

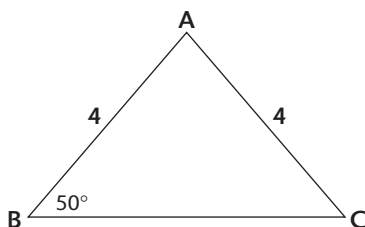
## GEOMETRY

Question 23 is based on the following drawing.



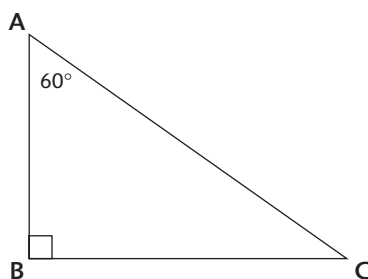
- 23.** In the diagram above, if angle A measures  $50^\circ$ , what is the measure of angle F?

Question 24 is based on the following drawing.



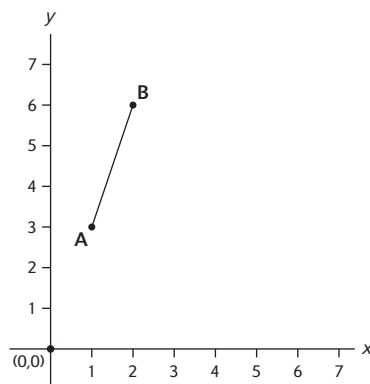
- 24.** In the isosceles triangle above, what is the measure of angle A?

Question 25 is based on the following drawing.



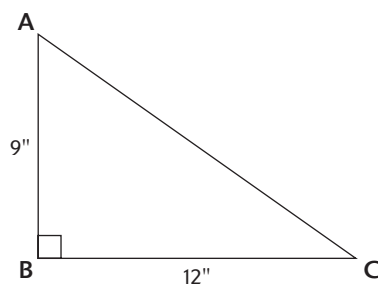
- 25.** In the right triangle above, what is the measure of angle C?
- 26.** If the area of a circle is  $9\pi$  sq in, what is the length of its radius?
- 27.** How many diagonals are in a regular pentagon?

*Questions 28, 29, and 30 refer to the following coordinate graph.*



- 28.** Point A has the coordinates (   ,   )
- 29.** The slope of line AB is
- 30.** The distance between points A and B is

*Question 31 is based on the following drawing.*



- 31.** Find the length of side AC in the right triangle above.

## Review Test Answers

---

Place a check next to the questions you missed so that you know what you need to review.

### ARITHMETIC

1. 8 square inches ☐
2. 24 square feet ☐
3. 27 cubic inches ☐
4. 8 hours ☐
5. 69 cents ☐



- 6. 6 ☐
- 7. 23 ☐
- 8.  $\frac{1}{3}$  ☐
- 9.  $4.3 \times 10^{-3}$  ☐
- 10.  $3^7$  or 2187 ☐
- 11. 324,000 ☐
- 12. mean =  $7\frac{2}{7}$  ☐  
median = 8 ☐
- 13. Wednesday to Thursday ☐
- 14.  $\frac{9}{30}$  or  $\frac{3}{10}$  ☐

## ALGEBRA

- 15.  $x = 3$  ☐
- 16.  $x - 3$  ☐
- 17.  $x < 2$  ☐
- 18. 32 ☐
- 19.  $6x^2 - 8x$  ☐
- 20.  $5x(x + 2)$  ☐
- 21. 25% ☐
- 22.  $x = 9$  ☐

## GEOMETRY

- 23.  $130^\circ$  ☐
- 24.  $80^\circ$  ☐
- 25.  $30^\circ$  ☐
- 26. radius = 3 inches ☐
- 27. 5 ☐
- 28. (1,3) ☐
- 29. 3 ☐
- 30.  $\sqrt{30}$  ☐
- 31. 15 inches ☐

**Now that you have completed and corrected your Review Test, continue your review by focusing on a brush-up of your weak areas.**



## PART IV

# PRACTICE TESTS

Use the following time limits to create a GED-like testing situation:

- Language Arts, Writing, Multiple Choice: 75 minutes
- Language Arts, Essay: 45 minutes
- Social Studies: 70 minutes
- Science: 80 minutes
- Language Arts, Reading: 65 minutes
- Mathematics, Parts 1 and 2: 45 minutes each

The problems in these practice exams are similar in style and difficulty to the problems on the actual exam. The actual GED examination is copyrighted and may not be duplicated. These questions are not taken from the actual tests.



# Practice Test 1

## Language Arts, Writing (75 mins., 50 ques.)

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### PART I

*Directions: Choose the one best answer to each question.*

Questions 1 through 8 refer to the following memorandum to employees.

#### Memorandum

To: All Employees  
From: Carson Miller  
Re: Writing Memos and Letters  
Date: January 20

(A)

(1) Please keep this memorandum and the accompanying packet of samples and information on file to refer to as you write, memos and letters. (2) Remember always that you are a representative of this company, no matter what your job description; and that what you write and how you write it creates an impression, either good or bad, concerning this company.

(B)

Internal Memos

(3) Please see the packet of samples labeled “Memo Form 1 Through Memo Form 12.” (4) This packet will give you examples of types of memos you might need to write to your fellow employees. (5) Although memos are intended for internal use, they may be seen by those outside the company. (6) So the same care with grammar, word choice, and tone should be taken with these as with any other correspondence. (7) These are formal communications, not having been personal letters. (8) Please keep that in mind.

(C)

Letters to Customers and Suppliers

(9) Only selected employees respond to or, according to our rules, initiates contact with customers or suppliers. (10) Only these employees will find examples of customer/supplier letters in their packets. (11) If you have not been specifically given the responsibility of corresponding with customers, please do not do so.

(D)

### General Correspondence

(12) Any employee who deals with any sort of general correspondence will have been supplied with a handbook of grammar and usage. (13) It is expected that each of you will refer to this handbook. (14) This book will help you avoid careless writing. (15) If you have any questions about a letter your writing, ask someone who knows before you send it.

(E)

(16) These comments are meant to help you improve your writing, enhance your learning, and to seek assistance with a task when you need to. (17) Please talk with me directly if you have any concerns with or questions about these matters.

1. Sentence 1: **Please keep this memorandum and the accompanying packet of samples and information on file to refer to as you write, memos and letters.**

Which correction should be made to sentence 1?

- (1) insert a comma after keep
- (2) change keep to keeping
- (3) replace memorandum with memos
- (4) remove the comma after write
- (5) change memos to memo

2. Sentence 2: **Remember always that you are a representative of this company, no matter what your job description; and that what you write and how you write it creates an impression, either good or bad, concerning this company.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) description; and that what you write
- (2) description and what you write
- (3) description. What you write
- (4) description of what you write
- (5) description: writing

3. Sentence 7: **These are formal communications, not having been personal letters.**

Which correction should be made to sentence 7?

- (1) change are to were
- (2) remove the comma after communications
- (3) remove the not
- (4) remove the having been
- (5) no correction is necessary

4. Sentence 9: **Only selected employees respond to or, according to our rules, initiates contact with customers or suppliers.**

Which correction should be made to sentence 9?

- (1) change employees to employee
- (2) change initiates to initiate
- (3) replace contact with contract
- (4) change or to and
- (5) change initiates to initiating

5. Sentences 13 and 14: **It is expected that each of you will refer to this handbook. This book will help you avoid careless writing.**

The most effective combination of sentences 13 and 14 would include which of the following groups of words?

- (1) Although it is expected
- (2) handbook although it will
- (3) handbook, which will help
- (4) handbook, and this book
- (5) you expect this book

6. Sentence 15: **If you have any questions about a letter your writing, ask someone who knows before you send it.**

Which correction should be made to sentence 15?

- (1) replace If you with If the company
- (2) replace your with you're
- (3) change your writing to you're correspondence
- (4) change knows to know
- (5) no correction is necessary

GO ON TO THE NEXT PAGE

- 7. Sentence 16: These comments are meant to help you improve your writing, enhance your learning, and to seek assistance with a task when you need to.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) improve your writing, enhance your learning, and to seek assistance
- (2) improve writing, enhance learning, and seeking assistance
- (3) improve, enhance, and seek
- (4) write, learn, and seek
- (5) improve your writing, enhance your learning, and seek assistance

- 8. Sentence 17: Please talk with me directly if you have any concerns with or questions about these matters.**

If you rewrote sentence 17 ending with please talk with me directly.,

which of the following words should begin the sentence?

- (1) If
- (2) Although
- (3) When
- (4) But
- (5) Before

*Questions 9 through 18 refer to the following fishing advice.*

### **How to Fish for Crappie**

**(A)**

(1) Some people, catch crappie from the shoreline or from a dock. (2) Some catch them from a fishing boat. (3) Crappie are members of the sunfish family. (4) Other members of the sunfish family are bluegill and rock bass. (5) These fish are also called panfish, probably because their small enough to fit nicely in a frying pan.

**(B)**

(6) There are two kinds of crappie, black crappie and white crappie. (7) In some places, a crappie must be a certain size before you can keep it. (8) Perhaps nine inches. (9) Also, in some places, you can only a certain number of crappie a day or keep a certain number of them at once. (10) How can you tell which is a white crappie and which is a black crappie? (11) A white crappie has six spines on its dorsal fin; a black one has seven or eight. (12) A white crappie has dark vertical bars, especially at spawning time, on its side, and a black crappie usually show dark blotches instead of bars.



(C)

(13) Jigs come in many colors — yellow, silver, pink, green, black, white. (14) They're supposed to look like the crappie's natural food, which is fish, insects, and crustaceans. (15) There are different types of crappie bait and lures, minnows and jigs mostly. (16) You have to decide how deep the fish are and move your jig through that area. (17) Crappie like structure in their area. (18) Structure can be brush or rocks or other objects on the bottom of the lake.

(D)

(19) You can fillet the fish by just taking the fillet off its sides, use a sharp knife. (20) Freeze them or cook it right away by frying, broiling, or steaming or by boiling and then chilling for salads.

- 9. Sentence 1: Some people, catch crappie from the shoreline or from a dock.**

Which correction should be made to sentence 1?

- (1) replace Some with Many
- (2) remove the comma after people
- (3) change catch to caught
- (4) change from the shoreline to on the shoreline
- (5) no correction is necessary

- 10. Sentences 1 and 2: Some people, catch crappie from the shoreline or from a dock. Some catch them from a fishing boat.**

Which revision should be made to the placement of sentences 1 and 2?

- (1) remove sentence 1
- (2) remove sentence 2
- (3) move sentences 1 and 2 to follow sentence 3
- (4) move sentences 1 and 2 to paragraph C
- (5) no revision is necessary

- 11. Sentence 5: These fish are also called panfish, probably because their small enough to fit nicely in a frying pan.**

Which correction should be made to sentence 5?

- (1) change fish to crappie
- (2) remove the comma after panfish
- (3) replace their with they're
- (4) change fit to fitting
- (5) change nicely to nice

- 12. Sentences 7 and 8: In some places, a crappie must be a certain size before you can keep it. Perhaps nine inches.**

The most effective combination of sentences 7 and 8 would include which of the following groups of words?

- (1) crappie, perhaps nine inches
- (2) size, perhaps nine inches
- (3) being nine inches
- (4) a nine-inch crappie
- (5) is maybe nine inches

GO ON TO THE NEXT PAGE

- 13.** Sentence 9: **Also, in some places, you can only a certain number of crappie a day or keep a certain number of them at once.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) can only
- (2) can
- (3) only can
- (4) may only
- (5) can have only

- 14.** Sentence 11: **A white crappie has six spines on its dorsal fin; a black one has seven or eight.**

Which correction should be made to sentence 11?

- (1) insert a comma after spines
- (2) change its to it's
- (3) replace the semicolon after fin with a comma
- (4) change or to and
- (5) no correction is necessary

- 15.** Sentence 12: **A white crappie has dark vertical bars, especially at spawning time, on its side, and a black crappie usually show dark blotches instead of bars.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) usually show
- (2) show usually
- (3) shows usual
- (4) usually shows
- (5) usual show

- 16.** Sentence 15: **There are different types of crappie bait and lures, minnows and jigs mostly.**

Which revision should be made to the placement of sentence 15?

- (1) move sentence 15 to begin paragraph C
- (2) move sentence 15 to follow sentence 16
- (3) move sentence 15 to follow sentence 18
- (4) remove sentence 15
- (5) no revision is necessary

- 17. Sentence 19: You can fillet the fish by just taking the fillet off its sides, use a sharp knife.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) sides, use a sharp knife.
- (2) sides, using a sharp knife.
- (3) you should use a sharp knife.
- (4) having used a sharp knife.
- (5) sides use a sharp knife.

- 18. Sentence 20: Freeze them or cook it right away by frying, broiling, or steaming or by boiling and then chilling for salads.**

Which correction should be made to sentence 20?

- (1) insert a comma after them
- (2) change it to them
- (3) change by to and
- (4) change or steaming to and steaming
- (5) change chilling to chilled

Questions 19 through 27 refer to the following information on insurance policies.

### What Types of Life Insurance Policies Are Available?

(A)

(1) Thirty years ago, there were only two types of life insurance. (2) These were term and whole life. (3) Now there are three. (4) The latest offering in life insurance is called universal life, it is basically a blend of term and whole life.

(B)

(5) Term insurance covers a buyers' life for a limited period of time for a fixed rate. (6) The cost of term insurance for a young man or woman in good health are low, but all the policy provides is protection in the event of death. (7) Because the cost of term insurance is low compared to the cost of other policies, term insurance may be a good bet for young people whose incomes are limited. (8) A whole life policy gives the same protection, and also an opportunity to save money and earn interest on that savings. (9) But the cost is certain to be higher. (10) These policies can be part of long-term financial planning.

(C)

(11) A universal life policy, the insurance companies claim, combines the best of both the term and the whole life policies. (12) It earns interest at a higher rate than a whole life policy. (13) But consumer groups have warned that sales and administrative fees are often higher with universal life policies. (14) And the advertised higher interest rates are sometimes good for only the first year. (15) The consumer needs to be aware of the benefits and drawbacks of each type of policy.

GO ON TO THE NEXT PAGE

- 19.** Sentence 1: **Thirty years ago, there were only two types of life insurance.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) there were
- (2) there was
- (3) there is
- (4) there are
- (5) there will be

- 20.** Sentences 1 and 2: **Thirty years ago, there were only two types of life insurance. These were term and whole life.**

The most effective combination of sentences 1 and 2 would include which of the following groups of words?

- (1) insurance, and these were term and whole life.
- (2) insurance, term and whole life.
- (3) insurance, these being term and whole life.
- (4) insurance, and these being term and whole life.
- (5) insurance, and these are term and whole life.

- 21.** Sentence 4: **The latest offering in life insurance is called universal life, it is basically a blend of term and whole life.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) universal life, it is basically
- (2) universal life and it is basically
- (3) universal life. It is basically
- (4) universal life and this is basically
- (5) universal life it is basically

- 22.** Sentence 5: **Term insurance covers a buyers' life for a limited period of time for a fixed rate.**

Which correction should be made to sentence 5?

- (1) replace insurance with assurance
- (2) change covers to cover
- (3) change buyers' to buyer's
- (4) insert a comma after time
- (5) no correction is necessary

- 23. Sentence 6: The cost of term insurance for a young man or woman in good health are low, but all the policy provides is protection in the event of death.**

Which correction should be made to sentence 6?

- (1) insert a comma after insurance
- (2) insert a comma after man
- (3) change are to is
- (4) remove the comma after low
- (5) change is to are

- 24. Sentence 8: A whole life policy gives the same protection, and also an opportunity to save money and earn interest on that savings.**

If you rewrote sentence 8 beginning with

The same protection is given,

The next word(s) should be

- (1) a whole life policy
- (2) so
- (3) and
- (4) and also
- (5) by

- 25. Sentence 11: A universal life policy, the insurance companies claim, combines the best of both the term and the whole life policies.**

Which correction should be made to sentence 11?

- (1) remove the comma after policy
- (2) remove the comma after claim
- (3) remove the commas after policy and claim
- (4) insert a comma after best
- (5) no correction is necessary

- 26. Sentence 13: But consumer groups have warned that sails and administrative fees are often higher with universal life policies.**

Which correction should be made to sentence 13?

- (1) change But to And
- (2) change groups to group's
- (3) change sails to sales
- (4) change fees to fee
- (5) change are to were

- 27. Sentence 14: And the advertised higher interest rates are sometimes good for only the first year.**

Which correction should be made to sentence 14?

- (1) insert a comma after advertised
- (2) insert a comma after higher
- (3) insert a comma after interest
- (4) insert a comma after rates
- (5) no correction is necessary

GO ON TO THE NEXT PAGE

Questions 28 through 35 refer to the following letter from a voter to a candidate for the position of state representative.

Dorothy Nugent  
2043 East Terrace  
Howes, MO 65324

Dear Ms. Nugent:

(A)

(1) Because you are a candidate for the state house of representatives in my district, I am writing to urge you to make your position clear regarding the proposed new three-cent gas tax. (2) I think it is important for the voter's to know where you stand on this issue.

(B)

(3) I am personally opposed to the gas tax for many reasons. (4) The Department of Roads got a new gas tax several years ago and at that time they promised us that they would complete a whole list of road projects around the state. (5) It is true that they did complete a few things, but these were projects in the big cities, not in my area. (6) Then they told us they run out of money and couldn't complete the projects as promised and needed even more money.

(C)

(7) The previous gas tax was supposed to expire this year and no longer be assessed. (8) But now we hear that this tax will still be in place and that even more tax will be added on. (9) There still isn't even repairs to the potholes on the highway near my house. (10) Which have been there for years now. (11) This area doesn't even have a local library.

(D)

(12) I think it is important that you speak out. (13) Please speak against this new gas tax because it won't benefit the voters in your area. (14) If you don't oppose the tax, I will have to vote against you and for your opponent in the primary election. (15) My neighbors are people that feel the same way.

Sincerely,

*Russell Lindgard*

Russell Lindgard

- 28. Sentence 2: I think it is important for the voter's to know where you stand on this issue.**

Which correction should be made to sentence 2?

- (1) change I to We
- (2) change for to if
- (3) change voter's to voters
- (4) insert a comma after know
- (5) change this to these

- 29. Sentence 3: I am personally opposed to the gas tax for many reasons.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) I am personally opposed
- (2) Personally opposed as I am
- (3) Because I am personally opposed
- (4) As a person opposed
- (5) Being opposed personally

- 30. Sentence 4: The Department of Roads got a new gas tax several years ago and at that time they promised us that they would complete a whole list of road projects around the state.**

The most effective revision of sentence 4 would begin with which of the following groups of words?

- (1) When the Department of Roads promised
- (2) When the Department of Roads got
- (3) Having promised and having received
- (4) Completing a whole list
- (5) Getting a whole list

- 31. Sentence 6: Then they told us they run out of money and couldn't complete the projects as promised and needed even more money.**

Which correction should be made to sentence 6?

- (1) replace Then with When
- (2) replace told with tell
- (3) replace run with ran
- (4) insert a comma after money
- (5) replace couldn't with couldnt

- 32. Sentence 9: There still isn't even repairs to the potholes on the highway near my house.**

Which correction should be made to sentence 9?

- (1) change still isn't to still wasn't
- (2) change isn't to aren't
- (3) change repairs to corrections
- (4) change potholes on the highway to street
- (5) insert a comma after potholes

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- 33.** Sentences 9 and 10: **There still isn't even repairs to the potholes on the highway near my house. Which have been there for years now.**

The most effective revision of sentences 9 and 10 would include which of the following groups of words?

- (1) my house, which have been
- (2) repairs, which have been
- (3) potholes, which have been
- (4) the highway, which has been
- (5) my house, which has been

- 34.** Which revision would improve the effectiveness of paragraph C?

- (1) remove sentence 7
- (2) remove sentence 8
- (3) move sentence 11 to the beginning of paragraph C
- (4) remove sentence 11
- (5) no revision is necessary

- 35.** Sentence 15: **My neighbors are people that feel the same way.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) are people that feel
- (2) are feeling people
- (3) will be people that feel
- (4) are people feeling
- (5) feel

Questions 36 through 44 refer to the following discussion of high-technology jobs.

### **Can High-Technology Jobs Replace Industrial Jobs?**

(A)

(1) Fifty years ago, a steel mill operated not far from downtown Pittsburgh. (2) Where the mill once stands, the city has developed an industrial park for high-technology companies, the types of companies that will supply many of the jobs of the future. (3) In the last 20 years, dozens of mills and thousands of industrial jobs have been lost across the country. (4) The loss of mills, and indeed the loss of other industrial plants all over the country, occurred in part because industrial production has been taken over by other countries in which wages are much lower, making the products much cheaper to produce.

(B)

(5) As the number of industrial jobs has declined, the number of jobs in high-tech industries has increased. (6) In fact, in metropolitan Pittsburgh more people now work, in high-tech fields than in industry. (7) In 1984, the Pentagon decided to locate its new national laboratory for



computer software research in Pittsburgh. (8) And the city is also now a center for research and manufacture in automation technology. (9) One Pittsburgh firm is supplying robots to the auto industry. (10) Another has developed new technology for devices to monitor heartbeats.

(C)

(11) Because few middle-aged industrial workers could take over computer jobs when they were laid off, previously industrial areas still have unemployment problems. (12) And the decline in technology-related jobs in the wake of the slump in the dotcom markets hasn't helped matters. (13) But the fact remains that high-tech jobs have helped and will continue to help lesson some of Pittsburgh's and other areas' economic problems.

- 36. Sentence 1: Fifty years ago, a steel mill operated not far from downtown Pittsburgh.**

Which correction should be made to sentence 1?

- (1) replace Fifty with Many
- (2) remove the comma after ago
- (3) change steel to steal
- (4) change operated to operates
- (5) no correction is necessary

- 37. Sentence 2: Where the mill once stands, the city has developed an industrial park for high-technology companies, the types of companies that will supply many of the jobs of the future.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) once stands, the city
- (2) once stood the city
- (3) once stood, the city
- (4) once has stood, the city
- (5) once has stood the city

- 38. Sentences 3 and 4: In the last 20 years, dozens of mills and thousands of industrial jobs have been lost across the country. The loss of mills, and indeed the loss of other industrial plants all over the country, occurred in part because industrial production has been taken over by other countries in which wages are much lower, making the products much cheaper to produce.**

The most effective combination of sentences 3 and 4 as a single sentence would include which of the following groups of words?

- (1) thousand of industrial jobs occurred
- (2) across the country, in part because
- (3) across the country occurred
- (4) last 20 years, in which wages
- (5) all over the country wages are much lower

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- 39.** Sentence 5: **As the number of industrial jobs has declined, the number of jobs in high-tech industries has increased.**

Which correction should be made to sentence 5?

- (1) change the first the number to the numbers
- (2) change has declined to have declined
- (3) change the second the number to the numbers
- (4) change has increased to have increased
- (5) no correction is necessary

- 40.** Sentence 6: **In fact, in metropolitan Pittsburgh more people now work, in high-tech fields than in industry.**

Which correction should be made to sentence 6?

- (1) remove the comma after fact
- (2) change people to peoples
- (3) remove the comma after work
- (4) remove the in after than
- (5) change than to then

- 41.** Sentence 7: **In 1984, the Pentagon decided to locate it's new national laboratory for computer software research in Pittsburgh.**

Which correction should be made to sentence 7?

- (1) remove the comma after 1984
- (2) change decided to has decided
- (3) change it's to its
- (4) change for to fore
- (5) insert a comma after research

- 42.** Sentences 9 and 10: **One Pittsburgh firm is supplying robots to the auto industry. Another has developed new technology for devices to monitor heartbeats.**

The most effective combination of sentences 9 and 10 as a single sentence would include which of the following?

- (1) industry, another
- (2) industry and another
- (3) industry; another
- (4) industry? another
- (5) industry: another

- 43.** Sentence 11: **Because few middle-aged industrial workers could take over computer jobs when they were laid off, previously industrial areas still have unemployment problems.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) they were laid off, previously industrial areas still
- (2) they were laid off previously industrial areas still
- (3) having been laid off, previously industrial areas still
- (4) having been laid off previously industrial areas still
- (5) they laid off, previously industrial areas still

- 44.** Sentence 13: **But the fact remains that high-tech jobs have helped and will continue to help lesson some of Pittsburgh's and other areas' economic problems.**

Which correction should be made to sentence 13?

- (1) change have helped to helped
- (2) change lesson to lessen
- (3) remove the apostrophe in Pittsburgh's
- (4) remove the apostrophe in areas'
- (5) no correction is necessary

Questions 45 through 50 refer to the following cooking advice.

### How to Boil an Egg

(A)

(1) How many times have one heard someone who can't cook described as a person who "can't even boil an egg"? (2) More than once, probably. (3) But there's more to boiling an egg than dropping it into boiling water. (4) Experienced cooks recommend a hard-cooked, not a hard-boiled, egg. (5) You can achieve a good hard-cooked egg in three ways.

(B)

(6) In the first method, once the water in which the eggs are cooking has reached the boiling point, you should reduce the heat and keep the water at a gentle simmer. (7) Prepared this way, hard-cooked eggs will take about 20 minutes. (8) For the second method, some chefs recommend cooking the eggs in water in the top of a double boiler. (9) By using this method, you can be sure the water will not be too hot. (10) A third method involves adding the raw eggs to cold water, bringing the water to a boil, and then covering the pot, removing it from the heat, and allowing it to sit for 20 minutes.

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(C)

(11) In properly cooked eggs, the yolks will be a golden yellow, not that greenish black you sometimes see. (12) To prevent discoloring, plunge the eggs into cold water as soon as it is removed from the hot water. (13) This step also helps to make the egg shells slip off the eggs smoothly and easily. (14) It seems that even some people who have been cooking for years can hardly boil an egg, at least as an egg should be boiled.

- 45. Sentence 1: How many times have one heard someone who can't cook described as a person who "can't even boil an egg"?**

Which correction should be made to this sentence?

- (1) change have one to have you
- (2) change one to everyone
- (3) change someone to people
- (4) change as a person who "can't to as a person who can't "
- (5) change "?" to ?"

- 46. Sentence 4: Experienced cooks recommend a hard-cooked, not a hard-boiled, egg.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) a hard-cooked, not a hard-boiled, egg.
- (2) a hard cooked, not a hard-boiled.
- (3) a hard-cooked not a hard boiled.
- (4) a hard cooked not hard boiled.
- (5) a hard-cooked, not hard boiled.

- 47. Sentence 6: In the first method, once the water in which the eggs are cooking has reached the boiling point, you should reduce the heat and keep the water at a gentle simmer.**

If you rewrote sentence 6 by changing

you should reduce the heat to the heat should be reduced,

the rest of the sentence would include which of the following groups of words?

- (1) and you should keep
- (2) and keep the water
- (3) and keeping the water
- (4) and the water kept
- (5) and so you will keep

- 48.** Sentence 7: **Prepared this way, hard-cooked eggs will take about 20 minutes.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) way, hard-cooked eggs will take
- (2) way, you will find that hard-cooked eggs take
- (3) way, you will find hard-cooked eggs take
- (4) way, you will see that hard-cooked eggs take
- (5) way, hard-cooked eggs will have taken

- 49.** Sentences 8 and 9: **For the second method, some chefs recommend cooking the eggs in water in the top of a double boiler. By using this method, you can be sure the water will not be too hot.**

If sentences 8 and 9 were combined, the most effective version would include which of the following groups of words in place of these words?

By using this method, you can be sure

- (1) to be sure
- (2) so you can be sure
- (3) a method that will make sure
- (4) a means of making sure that
- (5) and by using this method

- 50.** Sentence 12: **To prevent discoloring, plunge the eggs into cold water as soon as it is removed from the hot water.**

Which correction should be made to sentence 12?

- (1) remove the comma after discoloring
- (2) change into to in
- (3) change as soon as to when
- (4) change it is to they have been
- (5) no correction is necessary

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT WORK ON ANY OTHER SECTION IN THE TEST.



## Language Arts, Writing (45 mins.)

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### PART II

Topic A

Where would you like to travel in the next few years?

In an essay, identify where you might like to travel and why you selected the place, city, state, or country. Use your personal observations, experience, and knowledge to support your essay.



READER 1										READER 2										CHIEF READER										Fill in reader with correct score	
		0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7		
		0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7		
SCORE										SCORE										SCORE										READER	
		1	2	3	4	OFF						1	2	3	4	OFF						1	2	3	4	OFF				1	3

[illegible]



## Social Studies (70 mins., 50 ques.)

*Directions: Choose the one best answer to each question.*

1. During the 1850s, the United States moved towards civil war. What caused the breakdown of the nation?

Factors such as

- (1) the various factions of the Democratic Party joining together against their new common enemy: the Republicans
- (2) the ultimate failure of the Compromise of 1850 to resolve the long-standing disputes between the North and the South
- (3) Southern concerns that the Republican Party would gain both in popularity and influence in the South
- (4) the failure of the Whigs to endorse Abraham Lincoln as a compromise candidate in 1860
- (5) the extension of slavery into the new territories between the Missouri River and the Rocky Mountains

Questions 2 refers to the following information.

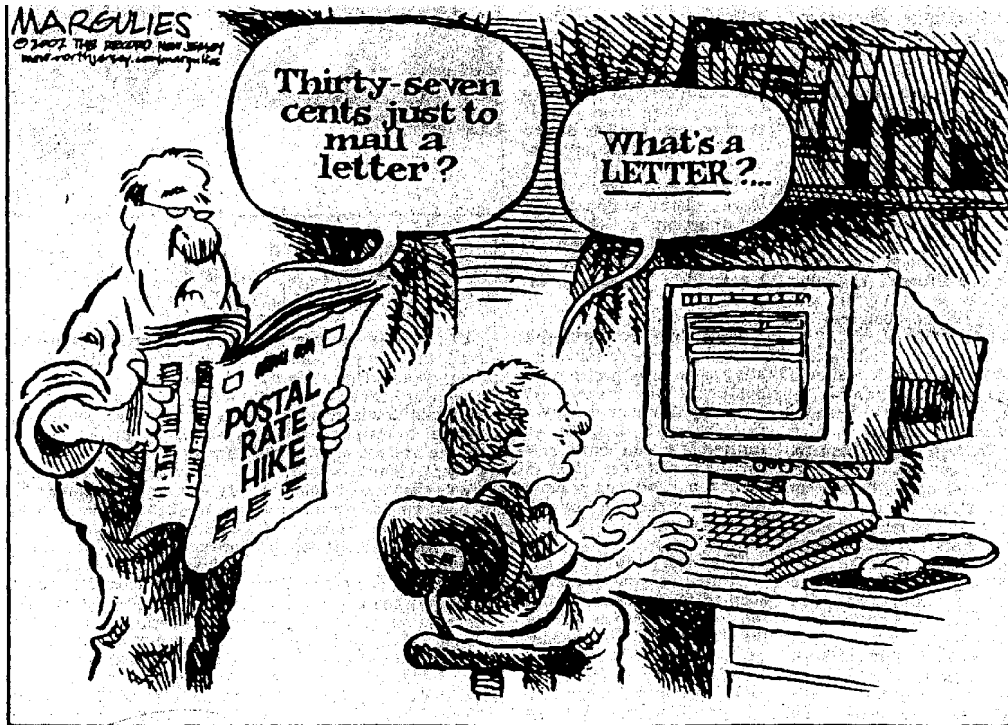
One writer has described the political party as a kind of political interest group. And so it is — the main difference being that the interest group is probably more assured of some community of interest by practically all of its members than a political party is. Different people see different facets of a political party, support it or oppose it for broadly different reasons.

At any rate, the party does provide an instrument which any voter may use with varying degrees of success to register his endorsement of, or protest against, what he considers to be the policy trend of a specific group of political leaders in public office.

2. Based on the information, which statement best describes the origin of political parties in the United States?
- (1) Political parties are organized as specified in the United States Constitution.
  - (2) Political parties made it possible for people to pursue political goals effectively.
  - (3) Voters elected their candidates for office to represent them in sponsoring legislation they wanted.
  - (4) Citizens complained that the government was not passing laws that were needed for political stability.
  - (5) People opposed the creation of political parties because the parties would favor interest groups.

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Questions 3 refers to the following cartoon.



3. According to the cartoon,

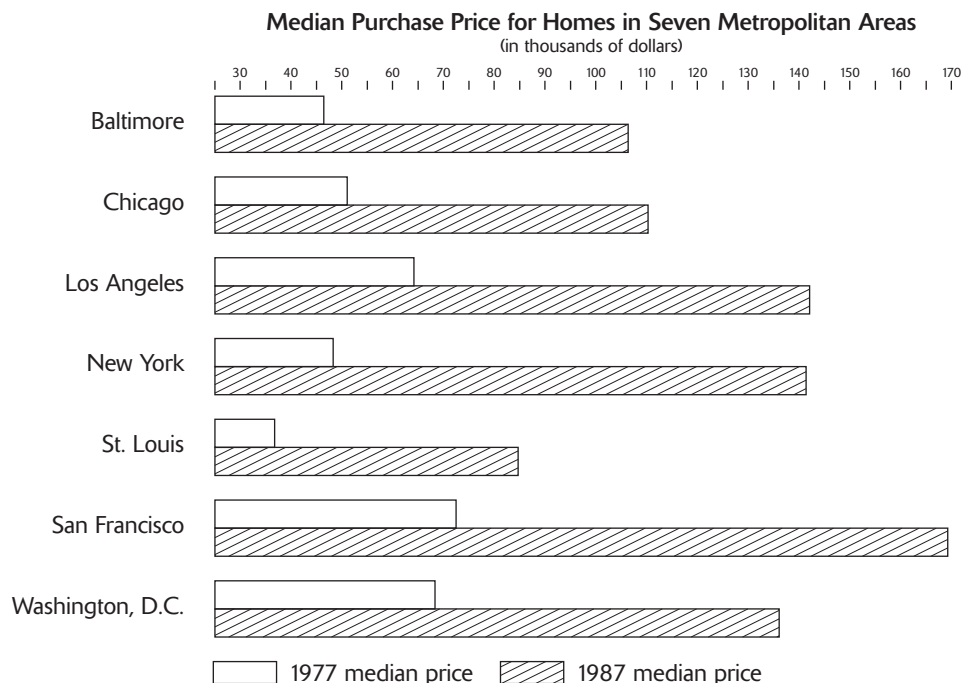
- (1) people in the United States can no longer afford to send a letter through the U.S. mail
- (2) young people are poorly educated and do not know how to write letters
- (3) computer technology has made it possible for people to communicate through e-mail, making postage rates unimportant
- (4) computers are faster than the U.S. mail
- (5) older people prefer to mail letters, whereas younger people prefer e-mail

4. The Strait of Gibraltar is a narrow body of water that provides the main entry and exit points for

- (1) the Mediterranean Sea and the Red Sea
- (2) the Suez Canal
- (3) the Gulf of California and the Pacific Ocean
- (4) the English Channel
- (5) the Atlantic Ocean and the Mediterranean Sea

5. Which of the following was a positive consequence of the Black Death Europe in the 14th century?
- (1) The labor shortage resulting from the deaths of so many workers stimulated the invention of machinery.
  - (2) Feudalism was strengthened as serfs sought protection from the diseases on the estates of the nobles.
  - (3) Royal monarchies were weakened because so many heirs to European thrones died.
  - (4) Peasants and skilled workers lost their jobs and could not find work.
  - (5) An estimated 20 million people migrated from Europe to the Middle East.

Questions 6 through 10 refer to the following graph.



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**6.** According to the graph, in 1977 the city with the lowest median purchase price for a home was which of the following?

- (1) Baltimore
- (2) Chicago
- (3) New York
- (4) St. Louis
- (5) Washington

**7.** In the ten years between 1977 and 1987, the median price of a home in Chicago increased by what percent?

- (1) about 25%
- (2) less than 75%
- (3) less than 100%
- (4) more than 100%
- (5) more than 200%

**8.** The increase in median price between 1977 and 1987 was more than \$50,000 in all of these cities EXCEPT which of the following?

- (1) Baltimore
- (2) Chicago
- (3) Los Angeles
- (4) New York
- (5) St. Louis

**9.** According to the graph, in 1987 the median price of a home in the metropolitan areas listed was

- (1) higher in East Coast cities than in West Coast cities
- (2) higher in Midwest cities than in West Coast cities
- (3) higher in West Coast cities than in East Coast cities
- (4) about the same in the cities of the East Coast and the West Coast
- (5) about the same in cities of the Midwest and the West Coast

**10.** In the ten years between 1977 and 1987, the largest dollar increase in the median price for a home was in which city?

- (1) Baltimore
- (2) Chicago
- (3) Los Angeles
- (4) St. Louis
- (5) San Francisco

Question 11 refers to the following information.

“The painter will produce pictures of little merit if he takes the works of others as his standard; but if he will apply himself to learn from the objects of nature he will produce good results. This we see was the case with the painters who came after the time of the Romans, for they continually imitated each other, and from age to age their art steadily declined.”

—Leonardo da Vinci, 15th century

**11.** Which of these statements best describes da Vinci's view of artists and their work?

- (1) Imitation is the sincerest form of flattery.
- (2) Studying nature may inspire an artist to do original work.
- (3) The Romans were the best artists, and everyone who came after them did poor quality work.
- (4) Painters who came after the Roman times did not do good work unless they imitated the Romans.
- (5) It is easier to study nature than to paint it.

Questions 12 and 13 refer to the following information.

Any separation of political life from the economic forces which dominated — indeed, defined — American life in the last half of the nineteenth century is artificial, yet necessary to an understanding of the context. This context within which the political process functioned should be stressed. Its intimate relationships with the development of the economy are obvious. Under President Grant and his six nineteenth-century successors, whether in periods of gross corruption or modest reformism, questions involving the effects of industrialization remained dominant. Extended disputes over the tariff and over currency manipulation are the two major examples of political responses to the effects of industrialization.

**12.** Which statement best describes the influence of industrialization in late 19th century America?

- (1) Industrialization created debate over the responsibility of government to deal with its abuses.
- (2) Government had little connection with economic forces defining American life in the late 19th century.
- (3) Government ignored crucial issues such as tariff reform and currency manipulation.
- (4) It is necessary to separate industrialization from the political process in order to analyze them.
- (5) Natural leaders failed to understand the importance and influence of economic activity on the nation.

**13.** How did the national government respond to industrialization during this period?

- (1) Grant and the presidents who followed him ignored the issue.
- (2) The government swung from the extremes of corruption to significant reforms.
- (3) The government debated the effects of industrialization but did little to solve disputes such as tariffs and currency reform.
- (4) Grant and the presidents who followed him unsuccessfully urged Congress to pass laws regulating industry.
- (5) Government passed important laws regulating industrialization and establishing a national currency.

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- 14.** Which of the following has been an important product of tropical rain forests?

The remedial benefit of

- (1) commercially valuable timber resources for Latin American housing projects
- (2) plants that provide important ingredients for drugs to treat disease
- (3) rivers capable of being harnessed for the production of hydroelectric power
- (4) their growing attraction as tourist destinations
- (5) the production of tropical products for export, such as bananas, mangos, and citrus

Questions 15 through 17 refer to the following paragraphs.

One factor which helped bring the American Revolution was a disagreement between colonists and the Crown over the extent of self-rule powers which should be placed in the hands of the colonists. If, as many colonial leaders maintained, the colonial legislatures should be given the power to control domestic policy while the English Parliament retained authority over intercolonial and foreign matters, a division of sovereignty would have been the result. But it was commonly believed at that time that sovereignty (ultimate political authority) could not be divided. Subsequent developments in the British Commonwealth and in the United States of America might be interpreted as supporting the viewpoint of the colonists that sovereignty could be divided. For a division of sovereignty between or among two or more levels of government is the core feature of the theory of federalism.

- 15.** The theory of federalism is based on what idea?

- (1) A nation may function with two or more levels of government.
- (2) All governmental power must be centrally located.
- (3) The Articles of Confederation would be supported by a centralized power.
- (4) Local governments were best fitted to deal with foreign policy.
- (5) Every state in the United States today is in itself a single government.

- 16.** The theory of federalism involves what basic division of power?

The division of power is based on

- (1) states' control of domestic policy and the national government's control of foreign policy
- (2) a split of power between the two major political parties
- (3) the national government's ultimate political authority
- (4) the ability of states to nullify the decisions of the national government
- (5) the decision of the framers of the Constitution to control state governments as well as the central government

**17.** The origins of the federal system of government are seen in

- (1) the governments of England and, later, the structure of governments such as those of France, Israel, and the Philippines
- (2) the choices open to the framers of the 1787 Constitution
- (3) the argument whether control of domestic policy could be granted to the colonies, creating a division of sovereignty
- (4) the agreement between colonists and the Crown over control of domestic policy
- (5) the agreement between colonists and the Crown that sovereignty could be divided

Question 18 refers to the following information.

The first sentence of the Fourteenth Amendment (1868) undertakes to define United States citizenship in these words: “All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside.”

- 18.** If a man was born in New York of parents who were both French citizens and who subsequently moved to live in Florida, which of the following would be true?

That man would

- (1) not be an American citizen nor a citizen of New York
- (2) not be an American citizen but would be a citizen of Florida
- (3) be an American citizen and a citizen of both New York and Florida
- (4) be an American citizen and a citizen of New York
- (5) be an American citizen and a citizen of Florida

Question 19 through 21 refer to the following information.

The tide of protest finally reached the level of the federal government around the turn of the century. While Theodore Roosevelt did not by himself bring Progressivism to the nation, his accession to the Presidency in 1901 was a major event in the movement to reform the system of corporate capitalism and its political structure. During his two administrations, Roosevelt expanded the powers of the Presidency and brought the first effective controls and regulations to bear on industry. Inappropriately called a “trust buster,” Roosevelt opposed indiscriminate use of the Sherman Act, since he believed that the national interest was best served by large-scale semi-monopolistic units of production, as long as their activities were monitored by federal regulatory agencies. Simultaneously, Roosevelt sought to enhance the power of the United States by pursuing a vigorous global foreign policy. His successor, William Howard Taft, was far less successful in attempting to follow similar policies. By the end of Taft’s term, the Republican party had split into warring factions, Roosevelt had emerged from retirement to try again for the White House, and the crucial election of 1912 resulted in the election of another kind of reformer — Woodrow Wilson.

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- 19.** According to the information, presidential leadership at the beginning of the 20th century
- (1) experienced an expansion of power in domestic and foreign policy
  - (2) almost immediately fell apart because of the quarrels between Roosevelt and Taft
  - (3) was most successful in breaking up business monopolies
  - (4) required compromise between Republican, Democratic, and Progressive leadership
  - (5) depended on the support of Congress

- 20.** Which of the following is true about President Theodore Roosevelt's reputation as a "trust buster"?

The reputation

- (1) rests on his desire to break up monopolies and business trusts
- (2) has been greatly exaggerated, since he actually believed in regulating big business rather than "busting" it
- (3) is inappropriate because it was not the president's duty to deal with corporate capitalism
- (4) required his unqualified support of the Sherman Act in dealing with large companies
- (5) united both Progressives and Republicans in seeking reform of the national economic system

- 21.** The goal of Progressivism was to
- (1) reform the capitalist economic system by having it be subject to governmental regulation
  - (2) free corporate capitalism from political influence
  - (3) create a coalition of Democrats, Republicans, and Progressives to enforce foreign policy goals
  - (4) choose presidents who favored progressive goals, such as Roosevelt and Taft
  - (5) reduce the threat of a president with too much political power

Question 22 refers to the following information.

The term "Industrial Revolution" describes the process of economic change from a stable agricultural and commercial society to the modern industrial society which is dependent on the use of machinery rather than hand tools. While the process was historically a gradual one and not the sudden change which the word "revolution" suggests, the economic, social, and political results were indeed revolutionary.

- 22.** Basically, the Industrial Revolution meant

- (1) the creation of the domestic system of production
- (2) the end of the factory system of production
- (3) the change from work done by hand to work done by machine power
- (4) the replacement of iron machines by more efficient wooden ones
- (5) that the middle class would be deprived of political and economic power



Questions 23 through 25 refer to the following section of the California Constitution.

[Initiative] Sec. 8. (a) The initiative is the power of the electors to propose statutes and amendments to the Constitution and to adopt or reject them.

(b) An initiative measure may be proposed by presenting the Secretary of State a petition that sets forth the text of the proposed statute or amendment to the Constitution and is certified to have been signed by electors equal in number to 5 percent in the case of a statute, and 8 percent in the case of an amendment to the Constitution, of the votes for all candidates for Governor at the last gubernatorial election.

**23.** The initiative process is an example of which of the following?

- (1) the power of the state legislature to make laws
- (2) a constitutional guarantee that both federal and state governments possess
- (3) the right of the people to directly propose state legislation
- (4) a constitutional check on the electors of a state
- (5) the power of the state legislature to amend the Constitution

**24.** Which statement does not accurately describe a California initiative?

- (1) An initiative may amend the state Constitution.
- (2) An initiative may amend the federal Constitution.
- (3) An initiative must be supported by at least 5% or 8% of voters in the last election for Governor.
- (4) A statute is easier to qualify than an amendment.
- (5) An initiative is submitted to the Secretary of State.

**25.** To qualify an initiative to amend the state Constitution, how many voters must sign the petition?

- (1) 52% of the voters in the state
- (2) 5% of the voters in the state
- (3) 8% of the voters in the state
- (4) 5% of the voters who voted for Governor in the last election
- (5) 8% of the voters who voted for Governor in the last election

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Question 26 refers to the following illustration.

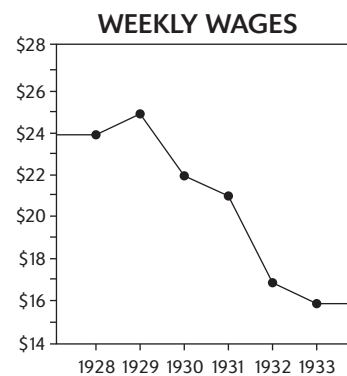
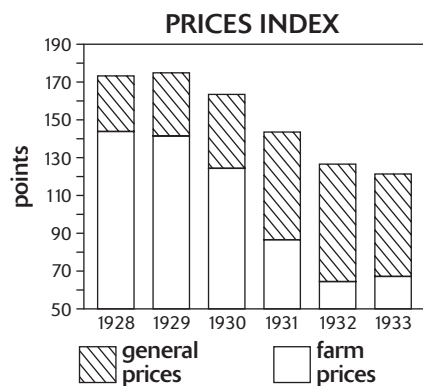
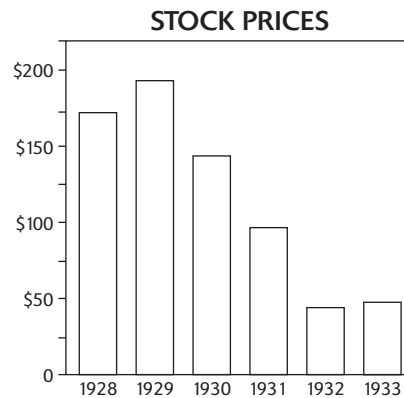


- 26.** The painting depicts Francis Scott Key as he sees the American flag still flying over Fort McHenry, Maryland, in the War of 1812. What is the significance of this scene?

It

- (1) provided the inspiration for Key to write “The Star Spangled Banner,” a poem that became the national anthem of the United States
- (2) told the famous story “The Man Without a Country,” by Edward Everett Hale
- (3) indicated that Great Britain could have decisively won the War of 1812
- (4) shows Key’s service as a spy for the United States against the British Navy
- (5) shows the vulnerability of American forts to British attack in the War of 1812

Questions 27 through 30 refer to the following graphs.



**27.** In the years between 1928 and 1933, the American economy was most prosperous in which year?

- (1) 1928
- (2) 1929
- (3) 1930
- (4) 1931
- (5) 1933

**28.** In which of the following years were farm prices at their lowest point?

- (1) 1928
- (2) 1930
- (3) 1931
- (4) 1932
- (5) 1933

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**29.** According to the Prices Index graph, between 1930 and 1932 farm prices

- (1) rose by about 40 points
- (2) rose by about 60 points
- (3) were unchanged
- (4) fell by about 40 points
- (5) fell by about 60 points

**30.** Which of the following is supported by the graph?

Unemployment declined in the years from

- (1) 1928 to 1929
- (2) 1929 to 1930
- (3) 1930 to 1931
- (4) 1931 to 1932
- (5) 1932 to 1933

Question 31 refers to the following photograph.



**31.** The architecture of the monastery and cathedral in the photograph indicates that they were most likely located and built in which of the following?

- (1) Greece, 4th century B.C.
- (2) Russia, 16th century
- (3) India, 18th century
- (4) Central America, 15th century
- (5) Vatican City, Italy, 19th century

Questions 32 through 34 refer to the following time-zone map.



**32.** Georgia is located in which of the following time zones?

- (1) Pacific
- (2) Mountain
- (3) Central
- (4) Eastern
- (5) Atlantic

**33.** Which of the following states is not located in the geographical area depicted on this map?

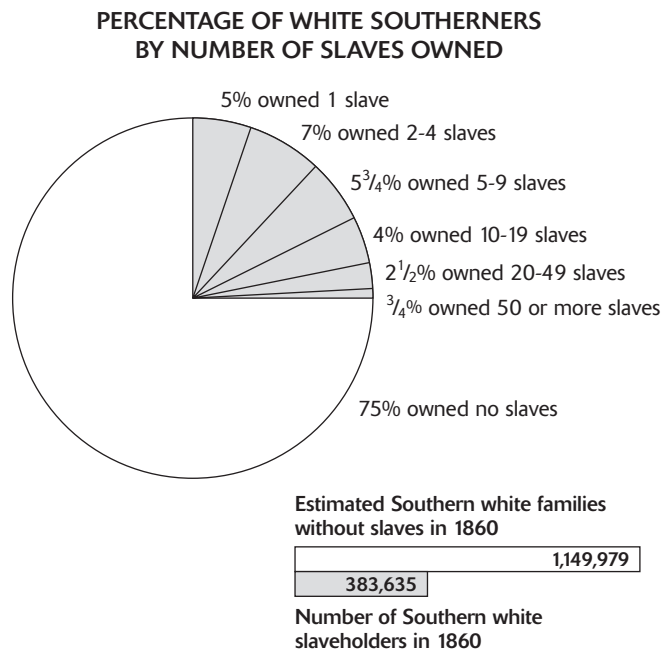
- (1) Oregon
- (2) Louisiana
- (3) New York
- (4) Alaska
- (5) Maine

**34.** Missouri is located in which of the following time zones?

- (1) Pacific
- (2) Mountain
- (3) Central
- (4) Eastern
- (5) Atlantic

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Questions 35 through 38 refer to the following graphs.



- 35.** According to the graphs, how many slaves did the largest percentage of slave-owners own?
- (1) one slave
  - (2) two to four slaves
  - (3) five to nine slaves
  - (4) ten to nineteen slaves
  - (4) no slaves
- 36.** According to the graphs, the smallest percentage of slave-owners owned how many slaves?
- (1) one slave
  - (2) two to four slaves
  - (3) five to nine slaves
  - (4) ten to nineteen slaves
  - (5) fifty or more slaves
- 37.** Which of the following is supported by the data in the graphs?
- (1) More than one million white families did not own slaves.
  - (2) More than five hundred thousand families owned at least one slave.
  - (3) Of those who owned slaves, 5% owned one slave.
  - (4) Of those who owned slaves, 7% owned two to four slaves.
  - (5) Of those who owned slaves, 4% owned ten to nineteen slaves.

- 38.** Which of the following is supported by the data in the graphs?
- (1) More than half of the slave-owners owned three or more slaves.
  - (2) The lowest percentage of slave-owning southerners had only one slave.
  - (3) The average white southerner was able to afford at least one slave.
  - (4) The percentage of the population that did not own slaves was equal to the percentage of the population that did own slaves.
  - (5) The smallest percentage of the slave-owning population owned the smallest number of slaves.

Questions 39 and 40 refer to the following information.

A quorum by definition is the number of members of an organization who must be present in order for the organization to officially conduct business. In the U.S. Constitution a quorum for the Senate is a fixed majority of the total membership. The total membership of the Senate is currently 100. A simple majority, like a quorum, is set at one more than half of the total membership.

- 39.** Which of the following best explains the purpose for requiring a quorum?
- To
- (1) make certain that all members of Congress must be present before legislation can be passed
  - (2) allow time for the President to veto a bill
  - (3) guarantee that all bills would be discussed by the House and Senate
  - (4) guarantee that a minimum number is present before legislation can be passed
  - (5) allow private citizens who oppose a bill to be heard before a vote is taken
- 40.** Which of the following events would account for a majority in the Senate increasing from 51 to 52?
- (1) an increase in the population of Florida
  - (2) a decrease in the population of Florida
  - (3) the admission of Puerto Rico as the fifty-first state
  - (4) allowing Nevada to replace a Senator
  - (5) Hawaii becoming the fiftieth state

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Questions 41 through 45 refer to the following information.

Listed below are five terms associated with some form of illegal activity, related to politics, public life, or finances. Each is followed by a brief definition.

- (1) **Conflict of interest** — a situation arising when a personal advantage, usually financial, is in conflict with unprejudiced performance of the duties or responsibilities of office
- (2) **Spoils system** — the practice of treating appointed jobs or contracts as the prizes (spoils) of an election victory and distributing them to party workers and associates
- (3) **Election fraud** — the use of deception to affect the legitimate result of an election
- (4) **Insider information** — confidential information which can be used to allow the insider to make a profitable investment or avoid a loss
- (5) **Consumer fraud** — the use of deception to cheat the buyer of a product or service

Each of the five following sentences describes a situation which is an example of one of these five terms. Choose the term that best describes the situation. The terms may be used more than once in the set of items. No one question has more than one best answer.

41. After being elected mayor of a large city, the winning candidate appoints his brother as chief of police, his sister as chief of accounting, and 11 members of his election staff to well-paid city jobs.

According to the passage, this is an example of which of the following?

- (1) a conflict of interest
- (2) the spoils system
- (3) election fraud
- (4) insider information
- (5) consumer fraud

42. A bank president buys a large piece of riverfront land when she learns from a confidential loan application that the construction company plans to use the money to develop shopping centers and homes on the riverfront.

According to the information, this is an example of which of the following?

- (1) a conflict of interest
- (2) the spoils system
- (3) election fraud
- (4) insider information
- (5) consumer fraud

43. A mail-order house advertises jewelry made of 18-carat gold, but the jewelry it sends to its customers contains no gold at all.

According to the information, this is an example of which of the following?

- (1) a conflict of interest
- (2) the spoils system
- (3) election fraud
- (4) insider information
- (5) consumer fraud



- 44.** A city's purchasing agent, who is responsible for all paper products bought by the city, is the part owner of a large office supplies company that is attempting to sell its products to the city.

According to the information, this is an example of which of the following?

- (1) a conflict of interest
- (2) the spoils system
- (3) election fraud
- (4) insider information
- (5) consumer fraud

- 45.** The signatures gathered to qualify a candidate for the ballot in a mayoral election have been forged using the names of former voters who are now dead.

According to the information, this is an example of which of the following?

- (1) a conflict of interest
- (2) the spoils system
- (3) election fraud
- (4) insider information
- (5) consumer fraud

Questions 46 and 47 refer to the following information.

No event in modern history so completely shocked the world as did the French Revolution — a revolution in which the radical cry of Liberty! Equality! Fraternity! for the masses challenged the protected interests of the privileged few. The effects were profound, for Europe and the world would never be the same again.

It began as an attempt by the leaders of the industrial and commercial classes to sweep aside the injustices and abuses of the Old Regime, but it soon swept away the French monarchy and allied all of Europe against the rising tide of French republicanism. In the process of fighting the coalitions of foreign armies, the newly formed citizen army of France — the first in modern history — inaugurated modern warfare. As opposed to the cautious maneuvering of small professional armies, transporting hundreds of tents and baggage for their officers, along with bread wagons and flour wagons to supplement the full ration of the soldier, the new warfare was a rapid movement of large armies carrying small supplies and living off the land.

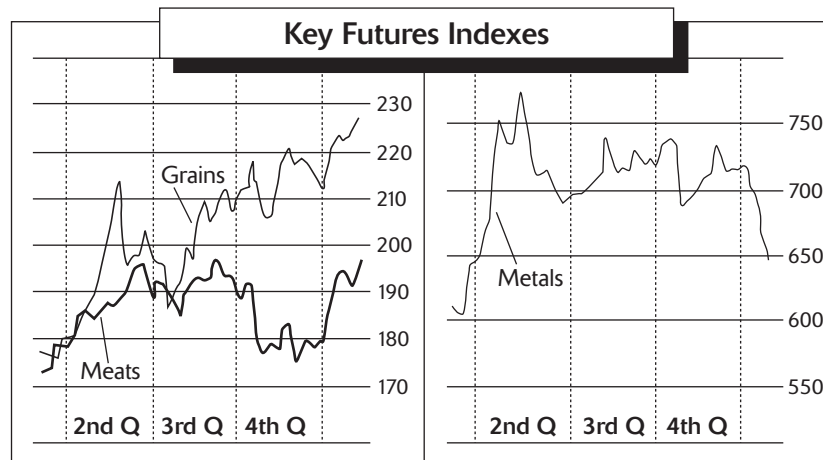
- 46.** In the wars in Europe that followed on the French Revolution, which of the following occurred?

- (1) Foreign armies invaded France in the common cause of ending the French monarchy.
- (2) The Old Regime restored order by forming an alliance with the industrial and commercial classes.
- (3) Foreign armies wanted to end republican rule in France.
- (4) The privileged classes crushed the masses.
- (5) The people of other nations rose in revolt and took up the radical slogans of the French.

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- 47.** According to the information, the French Revolution ushered in modern warfare by
- (1) recruiting professional soldiers who fought in small, specialized units
  - (2) requiring armies to bring large amounts of food, supplies, and equipment with them
  - (3) creating large armies of “citizen soldiers” who brought few supplies with them and moved rapidly
  - (4) a system of rejecting physically unfit soldiers in favor of healthy and trained troops
  - (5) recruiting professional soldiers from foreign nations

Questions 48 and 49 refer to the following graphs.



**48.** According to the graphs, at the end of the second quarter, metals were at which of the following?

- (1) 190
- (2) 200
- (3) 650
- (4) 700
- (5) 750

**49.** According to the graphs, at the end of the third quarter, what was the difference between the price of meats and the price of grains?

- (1) 5
- (2) 10
- (3) 15
- (4) 20
- (5) 25

**50.** Which of the following nations, although it presently supplies many products to the U.S., was not put under some form of European or American control in the Age of Imperialism?

- (1) China
- (2) Malaysia
- (3) India
- (4) Japan
- (5) Burma

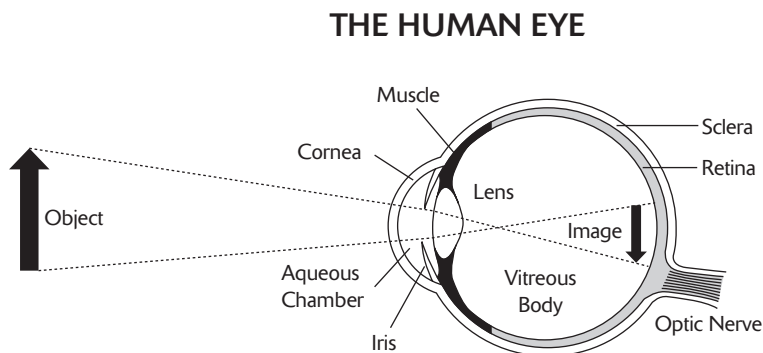
IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT WORK ON ANY OTHER SECTION IN THE TEST.



## Science (80 mins., 50 ques.)

*Directions:* Choose the one best answer to each question.

Questions 1 and 2 refer to the following diagram.



The diagram shows how light rays are refracted as they pass through the cornea, lens, and vitreous body to focus on the retina, where an image is formed. The optic nerve then carries impulses from the retina to the brain.

1. The diagram shows how a human eye sees an object.

In which part of the eye are light-sensitive cells that pass the image on to the optic nerve?

- (1) cornea
- (2) iris
- (3) lens
- (4) retina
- (5) sclera

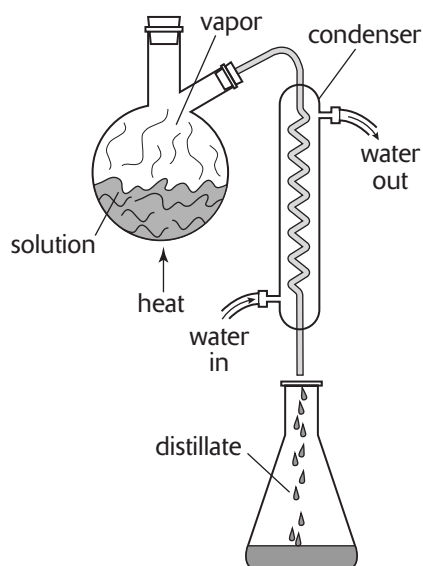
2. From the diagram, it appears that the image of the object is transposed; yet, we see the things right side up, not upside down.

Which of the following **BEST** explains why we see the image in the correct position?

- (1) The image is actually transposed twice as it crosses through the vitreous body.
- (2) The image is not actually transposed on the retina, merely slightly refocused.
- (3) The image is transposed onto the retina, but the brain makes the proper adjustment as it reads the impulses.
- (4) The optic nerve transposes the upside down images before they reach the brain.
- (5) The image is transposed as it passes through the lens, and then transposed again on the retina.

3. Alcohol dissolved in water is usually separated from the water by distillation. Distillation occurs when the solution is heated, because the alcohol is driven off as a vapor.

### Distillation



Which of the following statements would **BEST** represent the basis for this type of separation?

- (1) Alcohol has a lower boiling point than water does.
- (2) Alcohol has a slightly lower density than water does.
- (3) Alcohol is highly inflammable.
- (4) Water is much more viscous than alcohol is.
- (5) Water molecules are smaller than alcohol molecules.

Questions 4 through 7 refer to the following information.

### Life Zones

- **coniferous forest** — evergreen forests where winters are cold, summers cool, with moderate rainfall

- **deciduous forest** — broadleaf forests where winters are cold, summers warm, with abundant rain
- **desert** — small number of plants spread over a large area, winters are cool, summers very hot, with little rainfall at any season
- **prairie** — grasslands where winters are cold, summers hot, with occasional thunderstorms
- **tundra** — bushes and other low-growing plants, where only the surface soil thaws during the brief summer, below is permafrost

Each of the following questions describes conditions that refer to one of the five zones defined in the preceding information. For each question, choose the one life zone that best meets the conditions given. Each of the preceding life zones may be used more than once in the following set of questions.

4. One of the five zones that is located in Canada and the northern United States is composed of cone-bearing trees: pines, firs, and spruces. Caribou, elk, lynx, red fox, and wolverine are also part of this life zone. This same life zone presently has the largest numbers of moose, deer, mountain lion, and black bear.

In which of the life zones would you find the largest numbers of moose today?

- (1) coniferous forest
- (2) deciduous forest
- (3) desert
- (4) prairie
- (5) tundra

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5. Which of the life zones is **MOST LIKELY** to have mosses, lichens, sedges, and grasses as its main plants?

- (1) coniferous forest
- (2) deciduous forest
- (3) desert
- (4) prairie
- (5) tundra

6. In which of the life zones would plants grow and flower **MOST** quickly after rains?

- (1) coniferous forest
- (2) deciduous forest
- (3) desert
- (4) prairie
- (5) tundra

7. The region of the Great Lakes is a mixed forest of pines, maples, firs, and oaks.

Which of the five life zones would occur just to the north of the mixed forest?

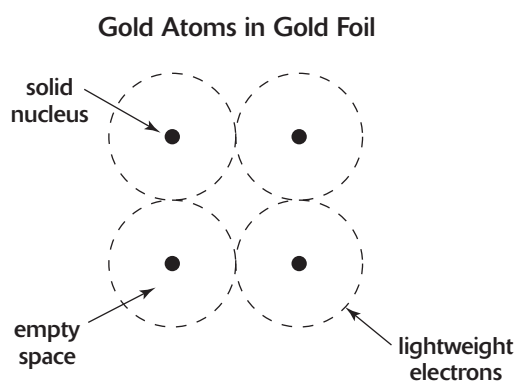
- (1) coniferous forest
- (2) deciduous forest
- (3) desert
- (4) prairie
- (5) tundra

Question 8 refers to the following information and diagram.

The great British physicist Ernest Rutherford discovered the basic structure of an atom. He performed a pioneering experiment in which a thin sheet of gold foil was bombarded with

a beam of alpha particles. The foil was so thin that each alpha particle would meet only a few atoms of gold. Most of the particles passed through the foil with little or no deflection, as Rutherford had predicted. However, to his astonishment, some of the alpha particles rebounded backward. He compared that event to a cannonball bouncing off a sheet of paper!

The following diagram gives a close look at the gold atoms in the gold foil.



8. Why did most of the alpha particles pass through the gold foil without rebounding backward?

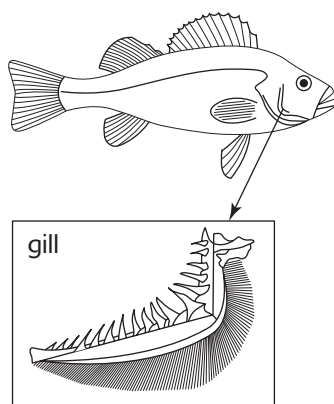
- (1) The alpha particles had no electrical charge.
- (2) The gold atoms were widely separated in the foil.
- (3) Gold particles participate in few chemical reactions.
- (4) The high velocity of the beam prevented recoil.
- (5) Most of each gold atom is empty space.

9. Most natural organisms depend on other organisms in the food chain for nutrition.

Which of the following organisms is MOST truly independent in obtaining nourishment?

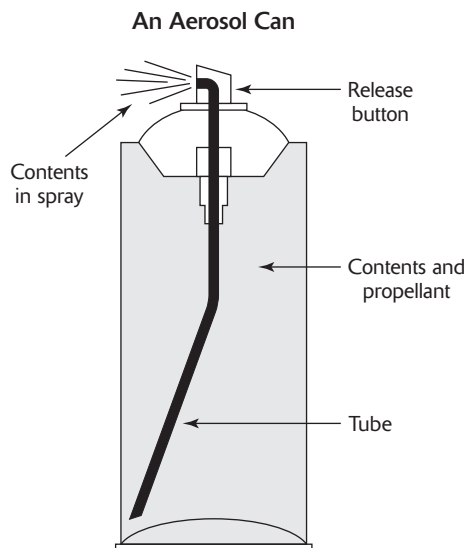
- (1) bighorn sheep
  - (2) codfish
  - (3) cougar
  - (4) mosquito
  - (5) palm tree
10. Which part of the human body does about the same job as the gills of a fish?

The Gill of a Fish



- (1) ears
- (2) esophagus
- (3) lungs
- (4) neck
- (5) thyroid gland

11. Whipped cream, shaving foam, paint, and deodorant are among the household products that come in pressurized aerosol cans.



Which of the following processes causes the ingredients to spray out when the top button is depressed?

- (1) the change from a gaseous to a liquid state
- (2) the expansion of a gas by being heated
- (3) the movement of molecules toward lower pressure
- (4) the multiplication of pressure inside a piston
- (5) the swelling of atoms to a larger size

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Question 12 refers to the following chart.

Insects Offered to a Monkey as Food		
	<i>Eaten by Monkey</i>	<i>Rejected by Monkey</i>
Insects of bright colors	23	120
Insects of dull colors	83	18

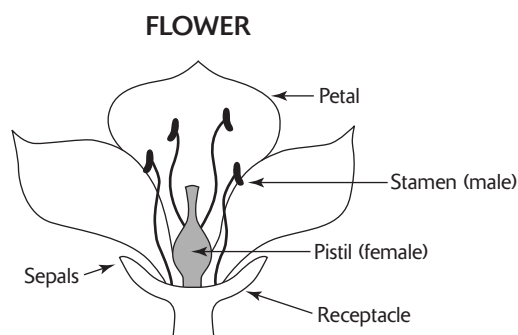
12. The chart sums up a study of 244 different species of insects offered to a monkey as food.

Which of the following would be the **MOST LIKELY** interpretation of the results in terms of animals adapting to their environment?

- A. Insects have adapted to have dull color to avoid being eaten.
- B. Insects of bright colors must have adapted to have bitter tastes.
- C. Many insect species have adapted to have bright colors for protection.
- D. Monkeys have adapted to eat most species of insects.

- (1) A and B only
- (2) C and D only
- (3) B and C only
- (4) A and D only
- (5) B and D only

Question 13 refers to the following diagram.



13. If this flower depends on bees to carry the pollen from one flower to another, the pollen would **MOST LIKELY** be on the

- (1) receptacle
- (2) stamen
- (3) pistil
- (4) sepals
- (5) stem

14. Today's lakes are young when compared to other features of the landscape. Each of the lakes was formed by some recent geological event, and each lake is being destroyed by present processes.

Which of the following is the main natural process that is destroying existing lakes?

- (1) erosion of outlet
- (2) evaporation
- (3) faulting and folding
- (4) pollution
- (5) sedimentation



Questions 15 through 19 refer to the following information.

Evolution is the gradual changing of a species. This evolving depends on three items: (1) changes in chromosomes and genes, (2) isolation to establish new species, and (3) natural selection based upon different rates of reproduction. Successful organisms have more offspring than unsuccessful ones.

Evolution can vary in the time it takes for the process to occur. It does not proceed at the same rate for all organisms. In general, evolution happens more quickly when a new species appears, but slows down as the group becomes stable.

New species develop from unspecialized or simple forms within a group, not from the most advanced or complex forms. Sometimes evolution proceeds from the complex to simpler forms. This regressive evolution occurs when there is some special benefit to a species to simplify its form. The return of mammals to the sea and the transformation of free-living worms to parasitic forms are examples of regressive evolution.

**15.** Which of the following is an example of regressive evolution?

- (1) a whale
- (2) a man
- (3) a rose
- (4) a cockroach
- (5) an alligator

**16.** A mutation or change in a gene that occurs in an individual will not have any effect on the group unless

- (1) the individual lives to a great age
- (2) the group stays in contact with almost all its members
- (3) the environment changes
- (4) it is a major gene change
- (5) the individual lives long enough to breed

**17.** Scientists believe that mammals developed from reptiles.

Which of the following is the **MOST LIKELY** reptile ancestor of mammals?

- (1) the most successful and advanced of the dinosaurs
- (2) the flying dinosaurs, called *archaeopteryx*
- (3) the specialized birds
- (4) a primitive reptile with few special adaptations
- (5) the fish-like dinosaurs of the ocean

**18.** Adaptive radiation is the evolution of many different species from the same ancestor.

Which factor aided the evolution of the finch as it evolved into many species in the Galapagos Islands?

- (1) the threat of predators
- (2) the closeness to other species of finches
- (3) the isolation of the islands
- (4) the help of humans
- (5) the large number of birds that already existed on the islands

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19. Fruit flies are often used in the study of gene mutation **MOST LIKELY** because

- A. they are rare
- B. they breed quickly
- C. many of their genetic characteristics are easy to see
- D. they seldom have changes in their genes
- E. they are small and easy to care for

- (1) A and D only
- (2) C and D only
- (3) A, C, and D only
- (4) B, C, and E only
- (5) A and E only

Question 20 refers to the following information.

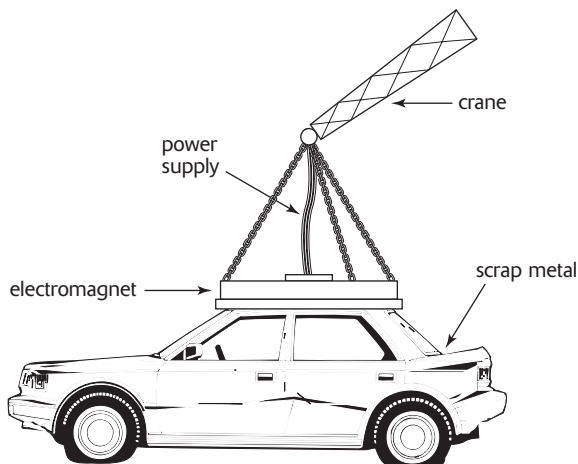
The western coast of North America, from Mexico to Alaska, has a series of what seem to be former shorelines, each above the present sea level. These sculptured hills display flat terraces, cliffs, caves, and beach sands that testify to former erosion by the waves. Some areas have as many as 20 level terraces, ranging in altitude from 100 to 2,000 feet above sea level. Also present are shells of marine creatures. Rocks and sands far above today's highest tide have remains of clams and barnacles.

20. The information gives several pieces of evidence for some coastal hills being ancient shorelines.

All of the following points are evidence of a shoreline **EXCEPT**

- (1) high altitude
- (2) marine shells
- (3) parallel terraces
- (4) sand deposits
- (5) special landforms

21. Junkyards often use large electromagnets to move pieces of scrap iron and steel. The magnetism is produced by a powerful electric current flowing through a large coil of wire.



How would the operator most easily get the magnet to let go of an iron object?

- (1) by joggling the crane to shake off the object
- (2) by sending electricity through the coil in the other direction
- (3) by throwing a switch to interrupt the current
- (4) by turning on an opposing electromagnet
- (5) by using a transformer to change magnetism into electricity

- 22.** Habit is present when an event is repeated again and again. Sometimes this habit is motivated by a reward.

Which of the following experiments **BEST** demonstrates the concept of habit?

- (1) a chimpanzee piling up boxes to reach a stalk of bananas
- (2) a dog growing on a meatless diet of vegetables and grains
- (3) a rat running through a maze faster each time
- (4) a rattlesnake vibrating its tail when poked by a stick
- (5) a young bird learning to fly without its mother

Questions 23 through 26 refer to the following chart.

Numbers of Subatomic Particles in Five Different Atoms			
<i>Atoms</i>	<i>Electrons (Charge of -1)</i>	<i>Neutrons (No Charge)</i>	<i>Protons (Charge of +1)</i>
A	19	21	19
B	18	22	18
C	18	20	17
D	18	20	19
E	18	18	16

Atomic weight of an atom is the sum of the protons and neutrons. The number of protons in each element is also the same as the number of the element in the periodic table. Two isotopes of one chemical element have the same number of protons but a different number of neutrons. The different number of neutrons causes the isotopes to have slightly different weights, but since both are the same element, they have the same chemical reactions.

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- 23.** Argon is the 18th element in the periodic table.

Which of the five atoms is argon?

- (1) A
  - (2) B
  - (3) C
  - (4) D
  - (5) E
- 24.** Which of the five atoms in the chart has a positive electrical charge?

- (1) A
- (2) B
- (3) C
- (4) D
- (5) E

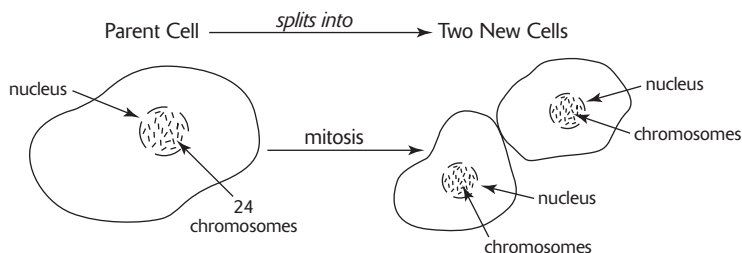
- 25.** Which two atoms in the chart are isotopes of the same chemical element?

- (1) A and B
- (2) A and D
- (3) B and E
- (4) C and D
- (5) C and E

- 26.** What is the range of atomic weights for the five atoms in the chart?

- (1) 16 to 22
- (2) 34 to 38
- (3) 34 to 40
- (4) 36 to 40
- (5) 52 to 59

Question 27 refers to the following diagram and information.

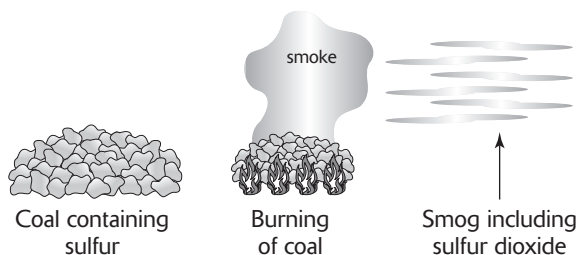


Mitosis is simple cell-splitting, during which one parent cell divides into two new cells. Because the chromosomes duplicate themselves during mitosis, each new cell has the same chromosomes as the original cell. A mammalian cell contains 24 chromosomes in its normal diploid state.

27. After two generations of division by mitosis, how many chromosomes will be present in each new cell?

- (1) 6
- (2) 12
- (3) 24
- (4) 48
- (5) 96

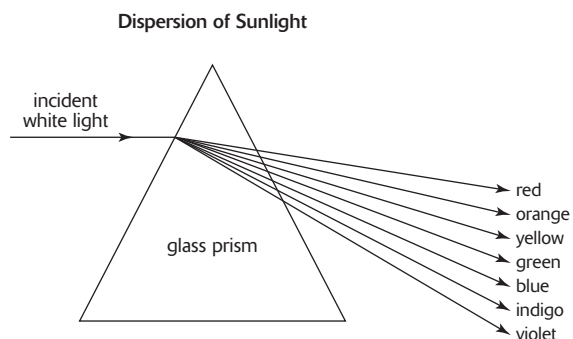
28. Sulfur dioxide is one of the main components of smog. The major source of that gas is the burning of coal containing traces of sulfur.



Which of the following sources of air pollution probably contributes **MOST** to the sulfur dioxide problem?

- (1) automobile engines
- (2) electric power plants
- (3) garbage dumps
- (4) home furnaces
- (5) motorboats

Question 29 refers to the following diagram.



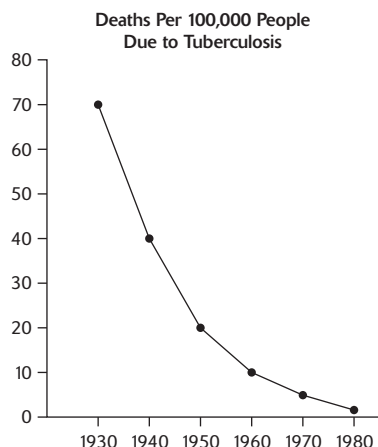
29. The diagram shows the production of the color spectrum by shining sunlight through a glass prism.

Which of the following is demonstrated by such an experiment?

- (1) The deflection of light rays is due to reflection.
- (2) The different atoms within glass emit separate colors.
- (3) Light is always deflected when passing through glass.
- (4) The reflection of white light yields many colors.
- (5) White light is a mixture of several colors.

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Question 30 refers to the following graph.



30. Based on the information in the graph, the greatest decline in deaths per 100,000 people due to tuberculosis occurred from

- (1) 1930 to 1940
- (2) 1940 to 1950
- (3) 1950 to 1960
- (4) 1960 to 1970
- (5) 1970 to 1980

Questions 31 through 33 refer to the following information. The following are concepts that relate the structures of two animals to their evolutionary origins:

- **homology** — The two structures are similar because they are inherited from one feature of one ancestor.
- **analogy** — The two structures perform the same function but are not inherited from one feature of one ancestor.
- **transformation** — The two structures perform different functions, although they are inherited from one feature of one ancestor.
- **convergence** — Several similar structures have developed in two animals whose ancestors were less alike.

- **divergence** — Several different structures have developed in two animals whose ancestors were more alike.

Each of the following questions describes a relationship that refers to one of the five concepts defined above. For each question, choose the one that best describes the relationship. Each of the preceding categories may be used more than once in the following set of questions.

31. A human's arm and a whale's flipper have the same number and same general arrangement of bones and function in a similar way.

Which concept **BEST** describes the relationship between the two structures?

- (1) homology
- (2) analogy
- (3) transformation
- (4) convergence
- (5) divergence

32. A dolphin is not a fish, but an air-breathing mammal with lungs. It bears live baby dolphins and suckles them like other mammals. The dolphin evolved from land-dwelling mammals.

Which of the following **BEST** describes the evolutionary relationship between dolphins and fishes?

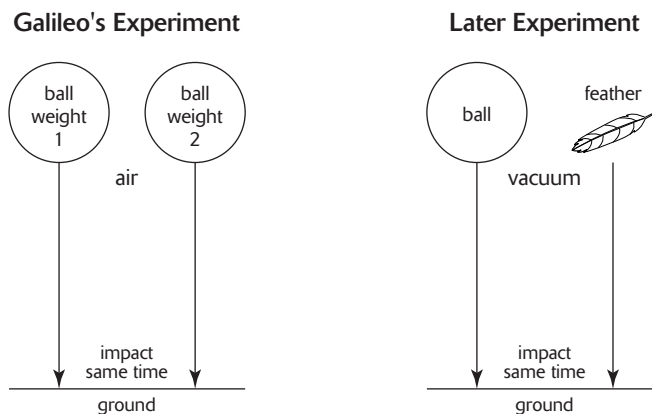
- (1) homology
- (2) analogy
- (3) transformation
- (4) convergence
- (5) divergence

33. All mammals are believed to have had one common ancestor: the earliest mammal, a reptile-like creature that developed better methods of caring for its young than simply leaving eggs like other reptiles.

Which of the concepts **BEST** explains the great variety of mammals on the Earth today, from mice to horses to humans?

- (1) homology
- (2) analogy
- (3) transformation
- (4) convergence
- (5) divergence

Questions 34 refers to the following diagram.



In a legendary demonstration, the great scientist Galileo dropped two balls of different weights from the Leaning Tower of Pisa. They hit the ground at the same time. In later experiments by other scientists, feathers and lead balls fell at the same rate in a vacuum.

**34.** Which of the following did Galileo discover in his legendary demonstration with two balls?

- (1) Air resistance had a major effect on the falling rate.
- (2) Direction of the fall had no effect on the falling rate.
- (3) Distance of the fall had a major effect on the falling rate.
- (4) Shape of the object had a minor effect on the falling rate.
- (5) Weight of the object had no effect on the falling rate.

**35.** Over many generations, each organic species has tended to become better adapted to its place in the environment.

Which of the following features is **LEAST** likely to be explained as adaptation?

- (1) the bright color of flowers
- (2) the eyes of a mole
- (3) a flying squirrel
- (4) the sting of a scorpion
- (5) the webbed feet of ducks

**36.** Sugar is NOT a chemical element.

Which of the following experimental findings **BEST** demonstrates that fact?

- (1) Crystals of sugar are not uniform in color.
- (2) Sugar burns to yield carbon dioxide and water vapor.
- (3) Sugar does not conduct electricity like a metal.
- (4) Sugar is highly soluble in water.
- (5) Sugar is not known to occur in the gaseous state.

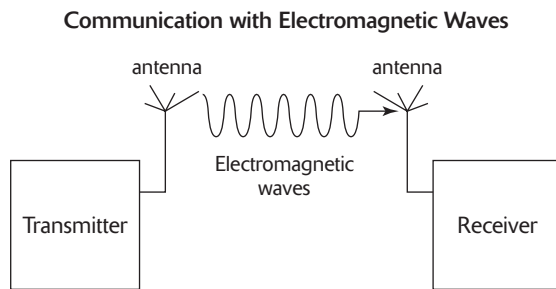
**37.** Many chemicals used in packaged foods are tested for safety by feeding them to laboratory mice.

Which of the following points is probably the **MOST** important scientific objection to such a testing method?

- (1) The chemicals might behave differently in mice than in people.
- (2) It is cruel to feed dangerous chemicals to helpless mice.
- (3) It is too expensive to test all food ingredients in the laboratory.
- (4) Mice can't eat enough to test a realistic amount of each chemical.
- (5) People are mammals, whereas mice are rodents.



Question 38 refers to the following diagram and information.



Electromagnetic energy, such as x-rays, ultraviolet, infrared, and radar, is commonly used today. Much of the communication in our society is by energy traveling as electromagnetic waves.

**38.** All of the following means of communication are electromagnetic **EXCEPT**

- (1) light
- (2) microwaves
- (3) radio
- (4) sound
- (5) television

Question 39 refers to the following chart.

<b>Distribution of Water Near Earth's Surface</b>	
<i><b>Location of Water</b></i>	<i><b>Percent</b></i>
Oceans	97.1
Saltwater lakes	0.008
Freshwater lakes	0.009
Rivers and streams	0.0001
Polar ice caps	2.24
Underground water	0.61
Water vapor in air	0.001
Total Water	100.0

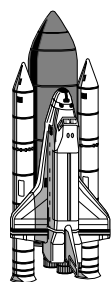
**39.** Pollution is a threat to all the types of water shown in the chart. However, one water resource, although not one of the two largest, is in particular danger.

Which of the following, once polluted, can spread pollution in an unseen and unpredictable way?

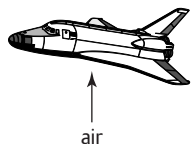
- (1) oceans
- (2) fresh-water lakes
- (3) rivers and streams
- (4) polar ice caps
- (5) underground water

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- 40.** The space shuttle is designed to lift off the Earth's surface, carry astronauts and materials into space, and return to Earth as a glider so that it can be used again for another mission.



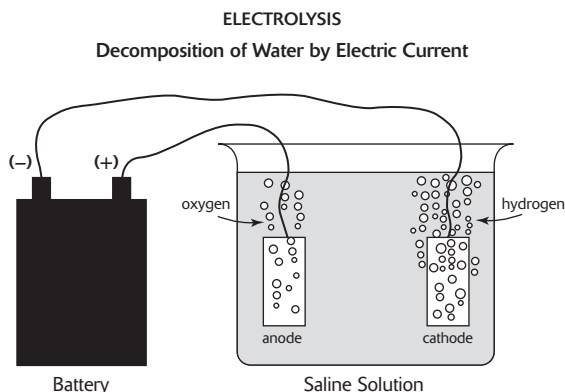
Shuttle liftoff

Shuttle returns  
as glider

The space shuttle could perform all of the following tasks **EXCEPT**

- (1) a landing on the moon
- (2) helping in the building of a space station in the Earth's orbit
- (3) servicing or repairing artificial satellites in the Earth's orbit
- (4) taking pictures of the Earth's surface
- (5) serving as a small laboratory in space for short-term experiments

Question 41 refers to the following diagram.

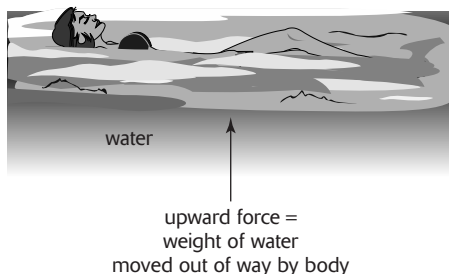


- 41.** The purpose of the electrolytic experiment is to break down water ( $\text{H}_2\text{O}$ ) into its elements: hydrogen and oxygen. If you examine the diagram carefully, you will see many more bubbles of hydrogen than of oxygen.

Why is more hydrogen released than oxygen?

- (1) The battery pumps small hydrogen atoms much more efficiently than it pumps large oxygen atoms.
- (2) The cathode material is considerably more porous than the anode material.
- (3) Hydrogen gas is less dense than oxygen gas, so hydrogen bubbles rise faster.
- (4) Some oxygen is dissolved into the solution, while all the insoluble hydrogen escapes.
- (5) The water that is being decomposed has twice as much hydrogen as oxygen.

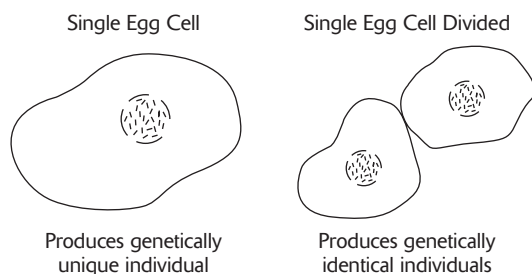
- 42.** Arminta can float in a swimming pool. This is because the water has power to exert an upward force on her body. The force of the water equals the weight of the water moved out of the way by her body.



What property of water **BEST** explains her ability to float?

- (1) buoyancy
- (2) mobility
- (3) surface tension
- (4) turbulence
- (5) viscosity

Question 43 refers to the following diagram and information.



When a woman has more than one child at a time during birth, each child commonly comes from a separate egg cell. Thus, the children are genetically different. If one egg cell divides, however, all of the children have an identical genetic heritage.

- 43.** If a boy and a girl are twins, which of the following is the most accurate statement about their origin?

- (1) They definitely came from one fertilized cell that divided.
- (2) They probably came from one fertilized cell that divided.
- (3) It is equally likely that they came from one or two cells.
- (4) They probably came from two separately fertilized cells.
- (5) They definitely came from two separately fertilized cells.

- 44.** A physicist defines inertia as follows: Inertia refers to the motion of objects. Objects resist any change in their motion. An object at rest will continue at rest, whereas a moving object will continue to move in the same direction and at the same speed.

Which of the following is the **BEST** example of the physicist's meaning of inertia?

- (1) The great Egyptian pyramids have endured for thousands of years.
- (2) A hockey puck slides in a straight line without slowing down.
- (3) A skydiver feels a jerk as the parachute opens.
- (4) A wrench dropped down an elevator shaft falls faster and faster.
- (5) Each day is precisely the same length as the previous day.

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Question 45 refers to the following information.

Some beach sands in Alaska currently are being worked for gold. Because there are large gold deposits inland, the soils and sediments along the Alaskan coast contain traces of gold.

**45.** Which of the following statements **BEST** explains why the gold is concentrated on those beaches?

- (1) Dense gold particles are left behind as the waves wash away other materials.
- (2) The gold was floated onto the shore in icebergs, which have completely melted.
- (3) The large tidal waves from frequent earthquakes wash the gold onto the shore.
- (4) Low water temperatures prevent the gold from dissolving as it does elsewhere.
- (5) Many treasure-laden ships have broken up on those dangerous shores.

**46.** Soft plant and animal tissue decompose quickly in the presence of decay bacteria. Such bacteria need oxygen to live.

In which of the following locations would soft tissue be **MOST LIKELY** to avoid decomposition and survive as fossils?

- (1) desert soil
- (2) beach sand
- (3) lake-bottom mud
- (4) offshore sandbar
- (5) river silt

Question 47 refers to the following information.

Dry wood is composed mainly of a stiff material called *cellulose*, a carbohydrate that cannot be digested by most animals. Even termites cannot directly dine on dry wood. However, termites have tiny, one-celled parasites that live inside their intestines, and those protozoa can digest cellulose. Because of this, termites can live on dead wood, as they benefit from tiny creatures. Those creatures, in fair exchange, rely on the termite for most of their food supply.

**47.** Based on the information, which of the following **BEST** describes the relationship between the termite and its tiny inhabitants?

- (1) The inhabitants benefit at the expense of the termite.
- (2) The termite benefits at the expense of its inhabitants.
- (3) Both the termite and its inhabitants benefit from their association.
- (4) Both the termite and its inhabitants are harmed by their association.
- (5) There is neither benefit nor harm in this particular association.

- 48.** Genetic scientists use the word “characteristic” to mean one feature of an organism. For example, eye color would be one characteristic.

Which of the following possible relationships would make genetic research more difficult?

- A. One characteristic is controlled by several genes.
- B. One gene controls one characteristic.
- C. One gene controls several characteristics.

- (1) A only
- (2) B only
- (3) A and B only
- (4) A and C only
- (5) B and C only

Questions 49 and 50 refer to the following information.

Many adults start their morning with a cup of coffee. As a matter of fact, many coffee drinkers swear that they need a cup of coffee in the morning to get started. The reason that coffee gets them started is that it contains a large amount of caffeine, a potent stimulant. This stimulant is also found in tea, cocoa, some soft drinks, and some aspirin compounds.

Caffeine stimulates the intellectual part of the brain, producing a clearer, more efficient flow of thoughts and ideas. Caffeine also has many

different effects on other parts of the body, making it of considerable value to groups ranging from athletes to migraine headache sufferers. Yet, caffeine is a nonessential chemical for human life. It is not a protein, fat, mineral, vitamin, or carbohydrate. And even though it is a natural, nonprescription substance that boosts performance and has many values, it poses some dangers, especially when used in extreme amounts.

- 49.** How much caffeine does the human body need?

- (1) The need is dependent upon the body weight of the individual.
- (2) The need is dependent upon the number of calories burned up by that particular body.
- (3) The need varies from person to person.
- (4) The amount of caffeine needed is in proportion to the vitamins needed.
- (5) The human body does not need caffeine.

- 50.** Caffeine is found in

- (1) natural substances only
- (2) artificial substances only
- (3) vitamins
- (4) minerals
- (5) regular Pepsi-Cola

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT WORK ON ANY OTHER SECTION IN THE TEST.



## Language Arts, Reading (65 mins., 40 ques.)

*Directions: Choose the one best answer to each question.*

Questions 1 through 5 refer to the following poem.

### What Fascinates Us About Penguins?

- How is it these quilled milk-bottle  
doorstops, straitjacketed in blubber,  
without either knees or elbows, that  
have to sleep standing, still seem
- (5) so hilarious a reflection of us, the  
spoiled rich kids of natural history,  
that notwithstanding our scant fondness  
for other of our kind, we do love penguins?  
They make us feel good about something
- (10) and whatever it is, we've got to  
look into it, we've got to have it.
- So off go our spies into the daylong  
dark of the Antarctic winter  
to eavesdrop on what they do there —
- (15) foodless, fretful, shuffling to balance  
an egg between foot and paunch until it hatches.
- Shrug off that adventure as lunatic  
or condemn it as invasion of privacy,  
you'll find us at the penguinarium  
staring rapt as they take their heartwarming
- (20) pratfalls on the ice, give vent to  
gusts of head-shaking enmity, or stand  
caricaturing the pathos of crowds  
in wait for something or other
- (25) that never arrives — but that clearly,  
whatever it is, is not us.

1. When she writes “quilled milk-bottle doorstops” (lines 1–2), the writer is referring to which of the following?

- (1) funny-looking elbows
- (2) funny-looking knees
- (3) penguin lovers
- (4) penguins
- (5) a new kind of doorstep

2. The writer would probably agree with which of the following conclusions?

- (1) Most people love penguins.
- (2) Penguins are afraid of humans.
- (3) The penguinarium is not a popular place.
- (4) Penguins fall on the ice as often as people do.
- (5) Most penguins love people.

3. Which of the following best describes the structure of the first stanza (lines 1–11)?

- (1) beginning/middle/end
- (2) first/second/third
- (3) question/answer
- (4) past/present
- (5) positive/negative

4. According to the poem, what do the “spies” (line 12) do?

They

- (1) go to the Antarctic to watch penguins
- (2) shuffle around, foodless and fretful
- (3) capture penguins for the penguinarium
- (4) slip upon the ice, in front of crowds
- (5) condemn penguins for invading their privacy

5. With the phrase “scant fondness for other of our kind” (lines 7-8), the author suggests which of the following?

- (1) People tend to like only penguins.
- (2) People tend not to like other people.
- (3) There is no fondness in natural history.
- (4) “Spoiled rich kids” are not fond of natural history.
- (5) Penguins are the “spoiled rich kids of natural history.”

Questions 6 through 11 refer to the following excerpt.

### How Does Milkman React to His Physical Problem?

[Milkman is the nickname of Macon Dead, Jr., son of the richest African-American man in a Midwestern town.]

- By the time Milkman was fourteen he had noticed that one of his legs was shorter than the other. When he stood barefoot and straight as a pole, his left foot was about half an inch off the floor. So he never stood straight; he slouched or leaned or stood with a hip thrown out, and he never told anybody about it ever. When Lena said, “Mama, what is he walking like *that* for?” he said, “I’ll walk any way I want to including over your ugly face.” Ruth said, “Be quiet, you two. It’s just growing pains, Lena.” Milkman knew better. It wasn’t a limp — not at all — just the suggestion of one, but it looked like an affected walk, the strut of a very young man trying to appear more sophisticated than he was. It bothered him and he acquired movements and habits to disguise what to him was a burning defect. He sat with his left ankle on his right knee, never the other way around. And he danced each new dance with a curious

- (25) stiff-legged step that the girls loved and the other boys eventually copied.

- The deformity was mostly in his mind. Mostly, but not completely, for he did have shooting pains in that leg after several hours on a basketball court. He favored it, believed it was polio, and felt secretly connected to the late President Roosevelt for that reason. Even when everybody was raving about Truman because he had set up a Committee on Civil Rights, Milkman secretly preferred FDR and felt very close to him. Closer, in fact, to him than to his own father, for Macon had no imperfection and age seemed to strengthen him. Milkman feared his father, respected him, but knew, because of the leg, that he could never emulate him. So he differed from him as much as he dared. Macon was clean-shaven; Milkman was desperate for a mustache. Macon wore bow ties; Milkman wore four-in-hands. Macon didn’t part his hair; Milkman had a part shaved into his. Macon hated tobacco; Milkman tried to put a cigarette in his mouth every fifteen minutes. Macon hoarded his money; Milkman gave his away. But he couldn’t help sharing with Macon his love of good shoes and fine thin socks. And he did try, as his father’s employee, to do the work the way Macon wanted it done.

6. Why does Milkman call Lena’s face “ugly”?

- (1) She is not as good-looking as he is, and he likes to remind her of that.
- (2) He resents her because she is the baby of the family.
- (3) He is angry because she has drawn attention to his leg.
- (4) She always makes fun of the things that he does.
- (5) He likes to tease her about her looks.

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7. What does the word “affected” (line 16) mean?

- (1) designed to impress
- (2) the result of an injury
- (3) designed to intimidate
- (4) elaborate
- (5) casual

8. Why does Milkman feel close to the late President Roosevelt?

- (1) President Roosevelt was the first president who supported civil rights.
- (2) Milkman admires President Roosevelt’s many accomplishments.
- (3) President Roosevelt was famous and powerful in spite of his problems.
- (4) Milkman believes that he has polio, just as President Roosevelt did.
- (5) President Roosevelt was a warm, compassionate man.

9. Which of the following best describes Milkman’s way of dealing with his short leg?

He

- (1) acts as though it is an asset rather than a liability
- (2) is embarrassed by it and therefore avoids contact with people
- (3) fantasizes about his similarity to President Roosevelt
- (4) is proud of it because it makes him more popular with his friends
- (5) tries to disguise it by the way he moves

10. Which of the following best characterizes Milkman’s relationship with his father, Macon?

He

- (1) feels no connection with his father because of Macon’s cold and distant personality
- (2) realizes that Macon despises him and there’s nothing he can do about it
- (3) is afraid of his father and tries to avoid him
- (4) feels that his leg keeps him from being like his father and therefore wants to be as different as possible
- (5) resents his father’s authority but admires his taste in clothing

11. Which of the following best describes Milkman’s character as it is shown in the excerpt?

He is

- (1) self-centered and unkind
- (2) shy and fearful of the opinion of others
- (3) self-conscious but strong-willed
- (4) sullen and rebellious
- (5) brave and admirable

Questions 12 through 17 refer to the following article.

### Why Isn’t Modernist Sculpture Popular?

- If you asked a Parisian or a New Yorker in 1886 what sculpture was, the answer (after a short blank stare) would have been: statues. Statuary, to borrow the mordant phrase of Claes Oldenburg
- (5)



many decades later, was “bulls and greeks and lots of nekkid broads.” The sculptor of that day was responsible—  
 (10) as in the age of film, TV and other ways of mass-circulating the visual icon he is not—for commemorating the dead, illustrating religious myth or dogma and expressing social ideals. The aim and meaning of the work were rarely in  
 (15) doubt. With statues, good or bad, from garden gnome to Marcus Aurelius, you knew where you were.

In the 20th century, which, in cultural matters, really began around 1880, this  
 (20) changed. After 1910 the momentum of change was plain to all. Why do we always speak of “modern sculpture” but never of “modern statues”? Because one of the criteria of modernity itself was the  
 (25) degree to which sculptors angled their work away from the accepted forms of social communication via the human figure. Not because they lost interest in the figure—on the contrary, the years  
 (30) 1900-1950 were rich in figure sculpture and body-haunted objects by Matisse, Picasso, Archipenko, Brancusi, Miro, Calder, Giacometti and others—but because they did not want to serve the  
 (35) social consensus in the way that statuary did. Consequently, few public commemorative sculptures made in the past 75 years have any real importance in the modernist canon; and conversely, modern  
 (40) public sculpture is mostly banal in the extreme.

Modern sculpture after 1910 wanted the liberty that painting had already claimed—the unobliged liberty of  
 (45) thought itself. It extracted new models from the changing culture around it, from painting and music, anthropology and psychoanalysis, from the idea of the “primitive” (that escape route of a culture  
 (50) stuck in the gridlock of its own sophistication) and the dream of a utopian machine future. One could have a sculpture

that was also a little building, like Alberto Giacometti’s *The Palace at 4 A.M.*, 1933, or still life, like Henri Laurens’ *Dish with Grapes*, 1918; an image of landscape, like David Smith’s *Australia*, 1951, or for that matter a real landscape, like Robert Smithson’s *Spiral Jetty*, 1970, a quarter-mile coil of rock now sunk in Utah’s Great Salt Lake. Marble, wood and bronze remained fundamental materials, but they were used in unorthodox ways; and in addition, a sculptor could use any  
 (55) kind of junk, from cardboard, tin and pine boards (the stuff of Picasso’s and Laurens’s cubist constructions) to the wire and celluloid favored by constructivists, the steel plates and boiler ends  
 (60) forged by Smith, and so on down to rocks, twigs, burlap, twine or even the artist’s own dung, which, canned and labeled by the Italian Piero Manzoni in 1961, provided a nastily prophetic comment on fetishism in late modern art.  
 (70)

**12.** In line 63, “unorthodox” means which of the following?

- (1) primitive
- (2) unusual
- (3) unconvincing
- (4) clever
- (5) lively

**13.** The third paragraph emphasizes which characteristic of modernist sculpture?

- (1) stupidity
- (2) beauty
- (3) ugliness
- (4) variety
- (5) largeness

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**14.** According to the excerpt, 100 years ago people thought sculpture was the same as which of the following?

- (1) photography
- (2) drawing
- (3) painting
- (4) machines
- (5) statuary

**15.** What does the writer mean, at the start of the second paragraph, when he says that “in cultural matters [the 20th century] really began around 1880”?

- (1) The cultural changes associated with the 20th century began before 1900.
- (2) The 20th century did not really begin in 1900.
- (3) There was a lack of culture before 1880.
- (4) The 20th century began sometime between 1880 and 1910.
- (5) The production of statues stopped in 1880.

**16.** The writer identifies cardboard, tin, pine board, rocks, twigs, and twine as which of the following?

- (1) fundamental materials
- (2) traditional materials
- (3) junk parts
- (4) Picasso’s materials
- (5) artistic toys

**17.** According to the third paragraph, changes in modern sculpture followed which of the following?

- (1) the public demand for new art
- (2) the popular need for liberty
- (3) the demand by artists that art change
- (4) the changes in modern painting
- (5) the disgust with public sculpture

Questions 18 through 22 refer to the following excerpt from a play.

**What Happens When Two Women Think They Are Engaged to the Same Man?**

CECILY: (rather shy and confidently)  
Dearest Gwendolen, there is no reason why I should make a secret of it to you. Our little country newspaper is sure to chronicle the fact next week. Mr. Ernest Worthing and I are engaged to be married.

(5) GWENDOLEN: (quite politely, rising)  
My darling Cecily, I think there must be some slight error. Mr. Ernest Worthing is engaged to me. The announcement will appear in the Morning Post on Saturday at the latest.

CECILY: (very politely, rising) I am afraid you must be under some misconception. Ernest proposed to me exactly ten minutes ago. (shows diary)

(10) GWENDOLEN: (examines diary through her lorgnette carefully) It is very curious, for he asked me to be his wife yesterday afternoon at 5:30. If you would care to verify the incident, pray do so. (produces diary of her own) I never travel without my diary. One should always have something sensational to read in the train. I am so sorry, dear Cecily, if it is any disappointment to you, but I am afraid I have the prior claim.

(30) CECILY: It would distress me more than I can tell you, dear Gwendolen, if it caused you any mental or physical anguish, but I feel bound to point out that since Ernest proposed to you he clearly has changed his mind.

(35) GWENDOLEN: (meditatively) If the poor fellow has been entrapped into any foolish promise I shall consider it my duty to rescue him at once, and with a firm hand.

(40) CECILY: (thoughtfully and sadly) Whatever unfortunate entanglement my dear boy may have got into, I will never reproach him with it after we are married.

(45) GWENDOLEN: Do you allude to me, Miss Cardew, as an entanglement? You are presumptuous. On an occasion of this kind it becomes more than a moral duty to speak one's mind. It becomes a pleasure.

(50) CECILY: Do you suggest, Miss Fairfax, that I entrapped Ernest into an engagement? How dare you? This is no time for wearing the shallow mask of manners. When I see a spade I call it a spade.

(55) GWENDOLEN: (satirically) I am glad to say that I have never seen a spade. It is obvious that our social spheres have been widely different.

- 18.** In the course of this scene, how does the behavior of the two women change?

They

- (1) become increasingly polite
- (2) become increasingly friendly
- (3) move from extreme politeness to open hostility
- (4) move from rage to quiet self-control
- (5) move from hostility to reconciliation

- 19.** The changes in their attitudes are indicated by which of the following?

They

- (1) call each other names
- (2) become more polite
- (3) raise their voices
- (4) change the subject
- (5) stop using terms of endearment

- 20.** The scene is carefully balanced. That balance is reflected by both women's mentioning all of the following **EXCEPT**

- (1) a newspaper
- (2) an engagement announcement
- (3) a diary
- (4) the ensnaring of Ernest
- (5) a moral duty

- 21.** In lines 54–55 when Cecily says, “when I see a spade I call it a spade,” she is doing which of the following?

- (1) talking about gardening
- (2) talking about gambling
- (3) asserting her good nature
- (4) asserting her frankness
- (5) asserting her claim to marry Ernest

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22. When Gwendolen replies, “I have never seen a spade” (line 57), she intends to suggest that she is which of the following?

- (1) socially superior to Cecily
- (2) not a card player
- (3) not interested in gardening
- (4) interested in astronomy
- (5) more down to earth than Cecily

Questions 23 through 29 refer to the following excerpt.

**What Effect Does the Dust Storm Have on the Farmers and Their Families?**

In the morning the dust hung like fog, and the sun was as red as ripe new blood. All day the dust sifted down from the sky, and the next day it sifted down. An even blanket covered the earth. It settled on the corn, piled up on tops of the fence posts, piled up on the wires; it settled on roofs, blanketed the weeds and trees.

The people came out of their houses and smelled the hot stinging air and covered their noses from it. And the children came out of the houses, but they did not run or shout as they would have done after a rain. Men stood by their fences and looked at the ruined corn, drying fast now, only a little green showing through the film of dust. The men were silent and they did not move often. And the women came out of the houses to stand beside their men to feel whether this time the men would break. The women studied the men’s faces secretly, for the corn could go, as long as something else remained. The children stood near by, drawing figures in the dust with bare

toes, and the children sent exploring senses out to see whether the men and women would break. The children peeked at the faces of the men and women, and then drew careful lines in the dust with their toes. Horses came to the watering troughs and nuzzled the water to clear the surface dust. After a while the faces of the watching men lost their bemused perplexity and became hard and angry and resistant. Then the women knew that they were safe and that there was no break. Then they asked, “What’ll we do?” And the men replied, “I don’t know.” But it was all right. The women knew it was all right, and the watching children knew it was all right. Women and children knew deep in themselves that no misfortune was too great to bear if their men were whole. The women went into their houses to their work, and the children began to play, but cautiously at first. As the day went forward, the sun became less red. It flared down on the dust-blanketed land. The men sat in the doorways of their houses; their hands were busy with sticks and little rocks. The men sat still thinking figuring.

23. The author uses the first paragraph to accomplish which of the following?

- (1) show the people and their plight
- (2) describe the effects of the dust on the sky and land
- (3) indicate the causes of the thick dust
- (4) create a mood of peace and stillness
- (5) suggest what will happen to the farmers and their families

- 24.** What comparison does the author make in the first paragraph?

The author compares

- (1) dust to rain
  - (2) the sun to fire
  - (3) dust to fog
  - (4) the sun to light
  - (5) dust to death
- 25.** The “something else” in line 23 refers to which of the following?
- (1) the men’s love for their families
  - (2) crops other than corn
  - (3) the children’s innocence
  - (4) the houses and barns
  - (5) the men’s spirit
- 26.** Which of the following lines could be described as the turning point in the excerpt?
- (1) “After a while the faces of the watching men lost their bemused perplexity and became hard and angry and resistant.” (lines 33–36)
  - (2) “As the day went forward, the sun became less red.” (lines 48–49)
  - (3) “The children peeked at the faces of the men and women, and then drew careful lines in the dust with their toes.” (lines 28–31)
  - (4) “The men were silent and they did not move often.” (lines 17–18)
  - (5) “Horses came to the watering troughs and nuzzled the water to clear the surface dust.” (lines 31–33)

- 27.** From the excerpt, which of the following words best describes these people?

- (1) hopeless
- (2) tough
- (3) bitter
- (4) religious
- (5) primitive

- 28.** Which of the following does the author use to convey the mood of this scene?

- (1) a description of individual characters
- (2) a contrast of the farm before and after the dust storm
- (3) a repetition of words, phrases, and sentence structure
- (4) both monologue and dialogue
- (5) the image of blood throughout the excerpt

- 29.** In John Steinbeck’s novel *The Grapes of Wrath*, from which this excerpt is taken, the Joad family leaves the “dust bowl” to go to California in hopes of a better life. They encounter many hardships and experience strong prejudice. On the basis of evidence in this excerpt, which of the following does Steinbeck probably emphasize about the Joads?

- (1) their extreme poverty
- (2) the men’s ability to solve problems
- (3) the terrible effects of prejudice on the human spirit
- (4) the ability of the family to survive no matter what
- (5) the pessimism that comes from a difficult life

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Questions 30 through 34 refer to the following credit card information.

### How Are Credit Card Charges Determined?

#### Credit Card Payment Requirements

##### *Payment Options*

- To determine the account balance on your account, we take the previous balance at the beginning of your billing cycle, subtract any payments or credits and add any purchases, cash access transactions, fees, and finance charges. If you do not pay the account balance on your account in full each month, by the time specified on the account statement, you agree to pay at least the minimum due shown on that statement. You may always pay more than the required minimum due and may pay your account balance in full at any time.

##### *Minimum Payments*

- The minimum due is based on the current account balance, as shown on your account statement, less any deferred payment balances offered as a special promotion.
- The minimum due each billing cycle will equal the calculated minimum payment plus any past due amounts. Your minimum due will be the greatest of (a) \$10.00; (b) your account balance multiplied by .0208 then rounded to the next higher whole dollar amount; or (c) the finance charges on your account rounded to the next whole dollar amount plus \$1.00.
- However, if your account balance is less than \$10.00, your minimum due will be your account balance.

##### *Credits and Payments*

Cash refunds will not be made for goods or services purchased with the

- account. Refunds will be made only by a credit to the account.

- You agree to repay all amounts owed on the account and to make all payments in proper form. A payment is made in proper form if it is made in U.S. dollars drawn on a federally insured depositor financial institution, sent to the processing address specified on your account statement, and accompanied by the remittance portion of your account statement. Payments in proper form received by us by 1:00 p.m. local time on a business day will be credited as of the day of receipt. Payment received after that time will be considered not to have been received as of that date and will instead be considered to have been received as of the next business day. Our business days are Monday through Friday, excluding federal holidays. Crediting to your account may be delayed up to five days if payment is not in proper form, including if it is received at any location other than the processing address specified on your account statement. In addition to any applicable finance charges, we may charge a late payment fee if any payment is not received or credited by the required time and date.

30. Under this agreement, which of the following is true?

You may

- (1) pay more than the required minimum
- (2) never pay your account balance in full
- (3) pay only the finance charge on your account
- (4) receive cash refunds on purchases within five days
- (5) make your payment up to 5 days after the required time and date without being charged a late fee



**31.** What does the word “deferred” (line 17) mean?

- (1) late
- (2) postponed
- (3) canceled
- (4) included
- (5) partial

**32.** According to this agreement, a late fee may be charged because of which of the following situations?

- (1) Your charges are less than \$10.00.
- (2) Your charges are more than \$10.00.
- (3) You have deferred payments, which include finance charges.
- (4) Your payment is made in the wrong location and processing is delayed.
- (5) You have finance charges on your account.

**33.** The calculated minimum payment (line 21–22) is based on which of the following?

- (1) finance charge balances
- (2) account balance as of the end of the billing cycle minus deferred payment balances
- (3) account balance as of the beginning of the billing cycle minus deferred payment balances
- (4) deferred payment balances
- (5) cash access transaction fees or \$10.00, whichever is larger

**34.** The deferred payment balances referred to in lines 17–18 would have what effect on your minimum payment due?

They would

- (1) not be included in calculating in your minimum payment due
- (2) decrease your finance charges
- (3) increase your finance charges
- (4) be multiplied by .0208 and added to your minimum payment due
- (5) add a \$1.00 fee to your minimum payment due

Questions 35 through 40 refer to the following excerpt from a story.

### Is There a Liquor Thief in the House?

- Mr. Nonell had lunch in a Lebanese restaurant with the man he considered his best friend. They were celebrating Mr. Nonell’s seventy-third birthday.
- (5) Since he hadn’t been drinking or eating extravagant meals for quite a while, he still felt a little tipsy when he got home. Even so, he had no trouble opening the door; he had realized on leaving the
- (10) restaurant that he had drunk too much, and all the way home he had been picturing himself struggling to get the key into the lock, just like in the movies. Euphoria had put him in a state of mind
- (15) that seemed to call for one more drink. So he went into his bedroom (which doubled as a study) and walked over to his formerly well-stocked liquor cabinet to take out the bottle of anisette, the only
- (20) bottle in there since his doctor had taken him off alcohol.

- It was empty. He had long suspected that every now and then Matilde would sneak a little swig. But he had never
- (25) found the bottle totally empty. And it was only empty this time, he mused, because for the past few weeks—for the first time in decades, and not without

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- (30) some sacrifice — Mr. Nonell hadn't touched a drop of liquor. He quickly put two and two together: Matilde had been taking a little tippie now and then in the belief that, between one sip and the next,
- (35) Mr. Nonell was doing the same. Confident that the level of liquid in the bottle went down just a bit each time, she hadn't realized that, since Mr. Nonell wasn't drinking at all, she had emptied it all by herself.
- (40)

Mr. Nonell had never given much thought to those furtive swigs of anisette. Matilde had been keeping house for him for forty-seven years, and

(45) she had always been an ideal servant. That afternoon, though, Mr. Nonell felt deeply hurt. Having found the strength not to touch a single drop for weeks, the least he could ask on coming home one day after a splendid meal, in the mood

(50) for one last drink — just one — was to have his way.

**35.** What does Mr. Nonell suspect that Matilde has been doing?

- (1) robbing his liquor cabinet of everything but the anisette
- (2) trying to hurt him for having lunch without her
- (3) pouring out all of his anisette
- (4) drinking all of his anisette, little by little
- (5) hiding the anisette in another room in the house

**36.** Which of the following best expresses the meaning of the final sentence of the excerpt?

- (1) Mr. Nonell was so weak, upon returning home, that he needed a drink.
- (2) Because Mr. Nonell had successfully stayed away from liquor for so long, he was entitled to a drink.
- (3) Because he successfully ate a good meal, Mr. Nonell wanted to celebrate with one drink.
- (4) Mr. Nonell had really been drinking constantly for weeks.
- (5) Mr. Nonell was not interested in a drink, just in the activities of Matilde.

**37.** Which of the following can be said about Matilde?

She

- (1) had been a fine servant for a long time
- (2) had emptied all of Mr. Nonell's liquor bottles
- (3) did not like Mr. Nonell to be happy
- (4) did not know about Mr. Nonell's seventy-third birthday
- (5) had no interest in Mr. Nonell's health



**38.** Which of the following does the writer emphasize throughout this excerpt?

- (1) the thoughts and feelings of Mr. Nonell
- (2) the facts leading up to the disappearance of the anisette
- (3) the reason why Matilde might deceive Mr. Nonell
- (4) the feebleness that had alarmed Mr. Nonell's doctor
- (5) the sacrifices Mr. Nonell had made to avoid liquor

**39.** Mr. Nonell suspects that Matilde did not know which of the following?

She did not know that he had

- (1) reached seventy-three years of age
- (2) returned home that afternoon
- (3) been to see his doctor
- (4) gone to lunch for his birthday
- (5) stopped drinking liquor

**40.** The excerpt suggests which of the following?

- (1) Despite the advice of his doctor, Mr. Nonell has continued to drink excessively.
- (2) Mr. Nonell still keeps a well-stocked liquor cabinet.
- (3) Mr. Nonell limits himself to one daily drink of anisette.
- (4) Mr. Nonell has never before suspected that Matilde is a liquor thief.
- (5) Anisette is a kind of liquor.

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT WORK ON ANY OTHER SECTION IN THE TEST.



# Mathematics (45 mins., 25 ques.)

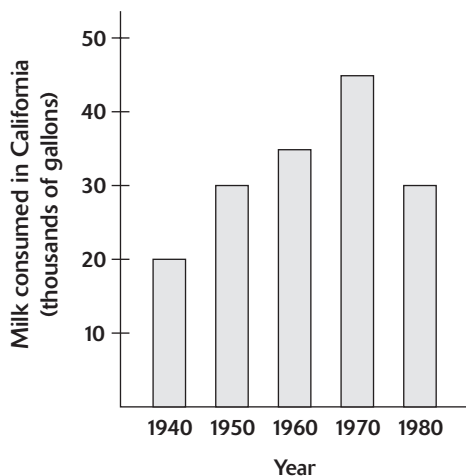
## PART I

### FORMULAS

Description	Formulas
<b>AREA (A) of a:</b>	
square	$A = s^2$ ; where $s$ = side
rectangle	$A = lw$ ; where $l$ = length, $w$ = width
parallelogram	$A = bh$ ; where $b$ = base, $h$ = height
triangle	$A = \frac{1}{2}bh$ ; where $b$ = base, $h$ = height
trapezoid	$A = \frac{1}{2}(b_1 + b_2)h$ ; where $b_1$ and $b_2$ are the bases and $h$ is the height
circle	$A = \pi r^2$ ; where $\pi = 3.14$ , $r$ = radius
<b>PERIMETER (P) of a:</b>	
square	$P = 4s$ ; where $s$ = side
rectangle	$P = 2l + 2w$ ; where $l$ = length, $w$ = width
triangle	$P = a + b + c$ ; where $a$ , $b$ , and $c$ are the sides
<b>CIRCUMFERENCE (C) of a circle</b> $C = \pi d$ ; where $\pi = 3.14$ , $d$ = diameter	
<b>VOLUME (V) of a:</b>	
cube	$V = s^3$ ; where $s$ = side
rectangular container	$V = lwh$ ; where $l$ = length, $w$ = width, $h$ = height
square pyramid	$V = \frac{1}{3} \times (\text{base edge})^2 \times \text{height}$
cylinder	$V = \pi r^2 h$ ; where $\pi = 3.14$ , $r$ = radius, $h$ = height
cone	$V = \frac{1}{3} \times \pi \times r^2 \times h$ ; where $r$ is the radius, $h$ is the height, and $\pi = 3.14$
<b>PYTHAGOREAN RELATIONSHIP</b> $a^2 + b^2 = c^2$ ; where $a$ and $b$ are the legs of a right triangle and $c$ is the hypotenuse	
<b>COORDINATE GEOMETRY</b>	
distance ( $d$ ) between two points in a plane	$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ ; where $(x_1, y_1)$ and $(x_2, y_2)$ are two points in a plane
slope of a line ( $m$ ) = $(y_2 - y_1)/(x_2 - x_1)$ ; where $(x_1, y_1)$ and $(x_2, y_2)$ are two points in a plane	
<b>MEASURES OF CENTRAL TENDENCY</b>	
mean	mean = $\frac{x_1 + x_2 + \dots + x_n}{n}$ ; where the $x$ 's are the values for which a mean is desired, and $n$ = number of values in the series
median	median = the point in an ordered set of numbers at which half of the numbers are above and half of the numbers are below this value
simple interest ( $i$ )	$i = prt$ ; where $p$ = principal, $r$ = rate, $t$ = time
distance ( $d$ ) as a function of rate and time	$d = rt$ ; where $r$ = rate, $t$ = time
total cost ( $c$ )	$c = nr$ ; where $n$ = number of units, $r$ = cost per unit

**Directions:** You will have 45 minutes to complete questions 1–25. You may use your calculator with these questions only. Choose the one best answer to each question.

1. The graph below shows the milk consumed in California for five different years from 1940 to 1980.



By approximately how many gallons did milk consumption in California increase from 1950 to 1970?

- (1) 15
- (2) 20
- (3) 45
- (4) 15,000
- (5) 45,000

2. Mr. Hogue collects antique miniature cars. At a recent auction, he purchased eight antique miniature cars for the following prices: \$35, \$55, \$75, \$90, \$60, \$40, \$80, and \$70. What is the **MEDIAN** price of the antique miniature cars that Mr. Hogue purchased?

- (1) \$45
- (2) \$50
- (3) \$55
- (4) \$60
- (5) \$65

3. A motorcycle that usually sells for \$1,000.00 has been discounted by 10%. How much is the sale price?

- (1) \$ 10.00
- (2) \$ 90.00
- (3) \$100.00
- (4) \$900.00
- (5) \$990.00

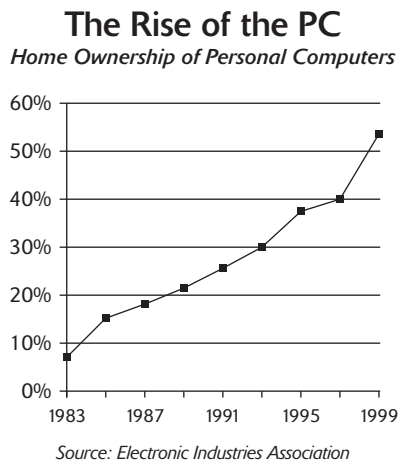
4. If  $8x + 16 = 32$ , what is the value of  $x$ ?

**PLEASE DO NOT WRITE IN THIS TEST BOOKLET.**

Mark your answer in the circles in the grid on your answer sheet.

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Questions 5 through 7 refer to the following graph, which shows the rise of home ownership of personal computers.



5. If 5,000 homes were surveyed in 1993, how many homes had personal computers?

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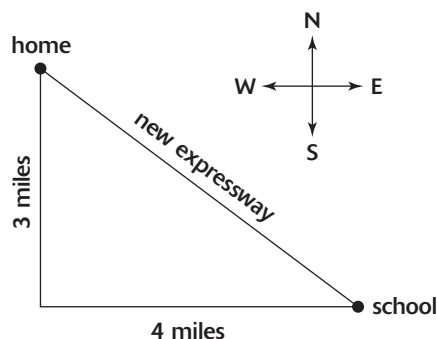
Mark your answer in the circles in the grid on your answer sheet.

6. The greatest increase in home ownership of personal computers came between which of the following years?
- (1) 1983 and 1985
  - (2) 1987 and 1989
  - (3) 1991 and 1993
  - (4) 1995 and 1997
  - (5) 1997 and 1999

7. Approximately what percent of homeowners had personal computers in 1985?

- (1) 10%
- (2) 15%
- (3) 19%
- (4) 21%
- (5) 25%

8. Russell now drives seven miles to school by first traveling three miles south and then four miles east, as pictured in the map below. Next month, the new expressway will be finished, and Russell can drive in a straight line directly to school.



How many miles will Russell's trip to school be on the new expressway?

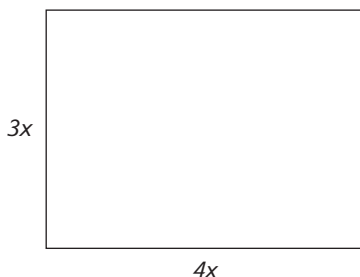
- (1) 7
- (2) 6
- (3) 5.5
- (4) 5
- (5) 4.5

9. To solve a problem, Tom was given the following formula:

$$w = 4x(y - 5)$$

If he knows that  $x = 2$  and  $y = 11$ , what is the value of  $w$  that Tom should get?

- (1) 48
  - (2) 68
  - (3) 83
  - (4) 252
  - (5) 451
10. You want to ship three packages — one worth \$820, another worth \$470, and the third worth \$210. Shipping costs 15 percent of what the packages are worth. What will be your total shipping costs?
- (1) \$ 2.25
  - (2) \$ 15.00
  - (3) \$ 225.00
  - (4) \$1500.00
  - (5) \$1550.00
11. The dimensions of the rectangle shown below are  $3x$  and  $4x$ .



What is the area of the rectangle in square units?

- (1) 7
- (2)  $7x$
- (3)  $12x$
- (4)  $12x^2$
- (5)  $14x^2$

12. To make 2 loaves of bread, a baker needs  $5\frac{1}{2}$  cups of flour. A large order just came in for 100 loaves. How many cups of flour will he need?

**PLEASE DO NOT WRITE IN THIS TEST BOOKLET.**

Mark your answer in the circles in the grid on your answer sheet.

13. Rico went on a weekend car rally. He drove 120 miles on Friday, 210 miles on Saturday, and 180 miles on Sunday. What was his mean (average) daily mileage?

**PLEASE DO NOT WRITE IN THIS TEST BOOKLET.**

Mark your answer in the circles in the grid on your answer sheet.

14. You need to make 350 cupcakes for the bake sale. You can make an average of 45 cupcakes in an hour. Approximately how long will it take you to make the 350 cupcakes?
- (1) between 4 and 5 hours
  - (2) between 5 and 6 hours
  - (3) between 6 and 7 hours
  - (4) between 7 and 8 hours
  - (5) between 8 and 9 hours

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15. Mr. Montoya, a local grocer, advertises that his prices are so low that you could save 25% off your present weekly grocery bill just by shopping at his store. If you now spend \$140 per week for groceries somewhere else, how much would you be expected to spend if you shopped at Mr. Montoya's grocery store this week?

- (1) \$125
- (2) \$120
- (3) \$115
- (4) \$105
- (5) \$100

16. The following sign is posted at Friendly Fruit Stand.

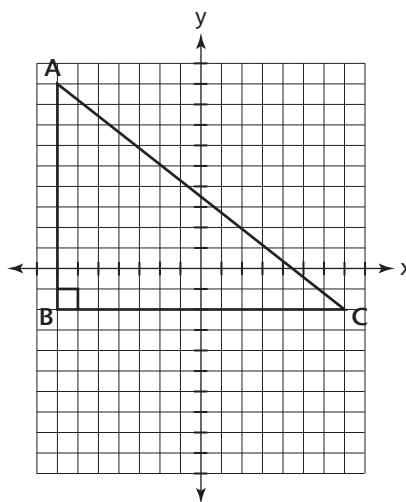
**FRIENDLY FRUIT STAND PRICE LIST**

<i>apples</i> .....	60¢ each
<i>bananas</i> .....	20¢ each
<i>cantaloupes</i> .....	59¢ each or 2 for \$1
<i>oranges</i> .....	39¢ each or 3 for \$1

Mr. and Mrs. Adams are planning to attend a company picnic and need to make fruit salad for the occasion. Their recipe calls for five apples, ten bananas, four cantaloupes, and five oranges. What is the least amount they could spend at the fruit stand to buy all the fruit they need for their salad?

- (1) \$11.00
- (2) \$ 9.23
- (3) \$ 9.00
- (4) \$ 8.82
- (5) \$ 8.78

17. Three vertices of triangle ABC are shown on the coordinate plane grid below.



What is the location of point D, which is where the longest side of the triangle intersects the y-axis?

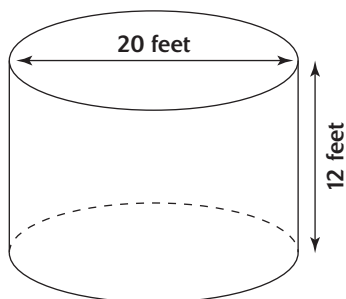
**DO NOT MARK YOUR ANSWER ON THE GRAPH ABOVE.**

Mark your answer on the coordinate plane grid on your answer sheet.

18. Right now, Michelle makes \$48 a day working on a road crew. Her employer has promised her a 12% raise beginning tomorrow. What will her new daily wage be, rounded to the nearest dollar, after she receives her raise?

- (1) \$50
- (2) \$53
- (3) \$54
- (4) \$56
- (5) \$60

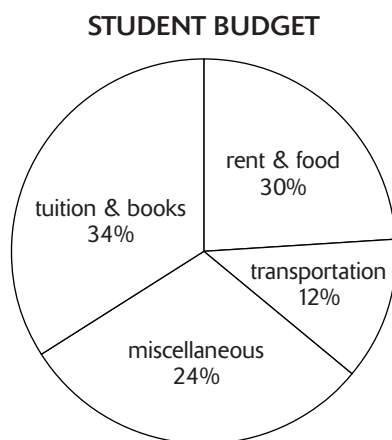
19. The diagram below shows the dimensions of a cylindrical space module.



Which of the following is the best estimate of the maximum volume (in cubic feet) of air the module can hold?

- (1) 3,600
- (2) 4,500
- (3) 7,700
- (4) 14,400
- (5) 21,200

Questions 20 and 21 are based on the following graph.



20. The graph shows how a student spent his budget in a given year. According to the graph, what percent of his budget was left after rent, food, tuition, and book expenses?

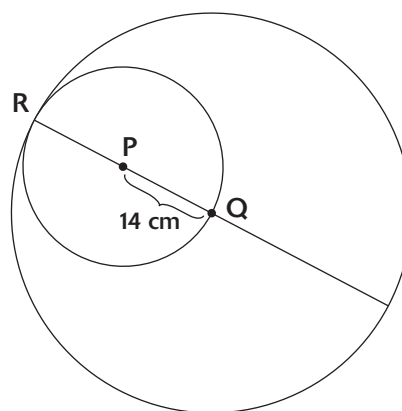
- (1) 26%
- (2) 28%
- (3) 36%
- (4) 64%
- (5) 100%

21. If the student spent \$6,800 on tuition and books, how much did he spend (in dollars) on rent and food in that same year?

**PLEASE DO NOT WRITE IN THIS TEST BOOKLET.**

Mark your answer in the circles in the grid on your answer sheet.

22. The plane figure below shows two circles. The smaller circle has its center at point P, and the larger circle has its center at point Q. The two circles intersect at point R, and PQ equals 14 centimeters (cm).



What is the diameter (in centimeters) of the larger circle?

**PLEASE DO NOT WRITE IN THIS TEST BOOKLET.**

Mark your answer in the circles in the grid on your answer sheet.

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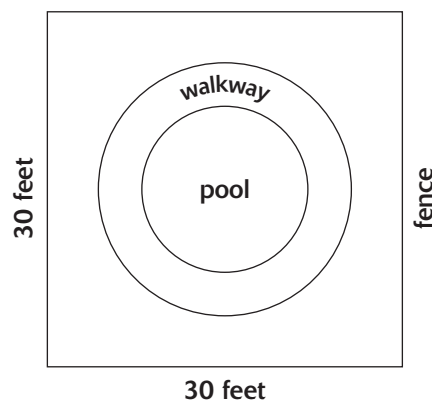
- 23.** Over the years, a dog named Abbey has had 48 puppies. Of these puppies, the number of females has been triple the number of males. How many of Abbey's puppies were females?

(1) 12  
(2) 16  
(3) 28  
(4) 32  
(5) 36

- 24.** Roy would like to reroof his house, which has a 15-hundred-square-foot roof. He can buy asphalt shingles by the bundle. Each bundle weighs 50 pounds, and 3 bundles will cover 100 square feet. How many pounds of shingles will it take to reroof Roy's house?

(1) 150  
(2) 500  
(3) 750  
(4) 2250  
(5) 5000

- 25.** There is a 30-foot by 30-foot fenced in square at City Park. The Council would like to put a circular wading pool right in its center. Around the pool, there must be a 3-foot-wide walkway which can be no closer than 5 feet from the fence. The diagram below shows the plan.



What is the largest possible radius (in feet) of the pool?

- (1) 5  
(2) 7  
(3) 8  
(4) 11  
(5) Not enough information is given

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT WORK ON ANY OTHER SECTION IN THE TEST.



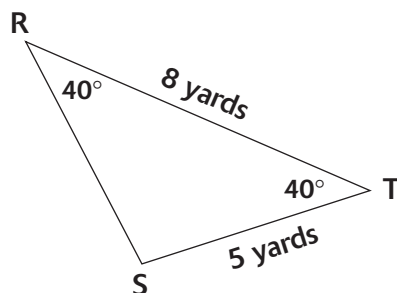


# Mathematics (45 mins., 25 ques.)

## PART II

*Directions:* You will have 45 minutes to complete questions 26–50. You may **NOT** use a calculator with these questions. Choose the one best answer to each question.

- 26.** The isosceles triangle RST below has sides of lengths 8 yards and 5 yards and two angles each measuring  $40^\circ$ , as marked.



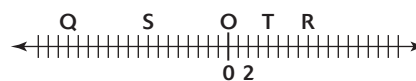
What is the perimeter (in yards) of the isosceles triangle RST?

- (1) 8
  - (2) 13
  - (3) 18
  - (4) 20
  - (5) 40
- 27.** Alice wants to send 400 wedding invitations. She can do about 16 per day. If she begins on January 1, when could she expect to finish?
- (1) on January 25
  - (2) on February 18
  - (3) on March 30
  - (4) on April 15
  - (5) on May 1

- 28.** Jennifer works in a candy store, where she sells chocolate for \$7.35 per pound. Last week, she sold 3 pounds on Monday; 5 pounds on Tuesday; 4 pounds on Wednesday; 6 pounds on Thursday; and 8 pounds on Friday. Which of the following expressions best represents how much money Jennifer would have collected in chocolate sales last week?

- (1)  $3 + 5 + 4 + 6 + 8$
- (2)  $13 + 7.35$
- (3)  $13(7.35)$
- (4)  $26(7.35)$
- (5)  $26 + 7.35$

- 29.** The number line below has placed the values 0 and 2.



Which letter on the number line represents 8?

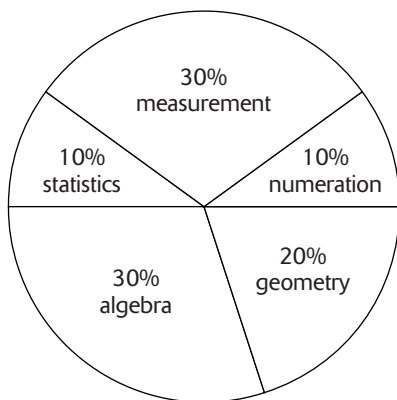
- (1) R
- (2) O
- (3) S
- (4) T
- (5) Q

GO ON TO THE NEXT PAGE

30. Pat's chickens eat  $1\frac{1}{4}$  ounces of feed per day. How many days will  $17\frac{1}{2}$  ounces of feed last?

(1) 6  
(2)  $8\frac{1}{2}$   
(3) 14  
(4) 17  
(5)  $18\frac{3}{4}$

31. The circle graph below shows the breakdown of problem types on a mathematics test.



If the mathematics test contains five numeration problems, how many algebra problems should you expect?

**PLEASE DO NOT WRITE IN THIS TEST BOOKLET.**

Mark your answer in the circles in the grid on your answer sheet.

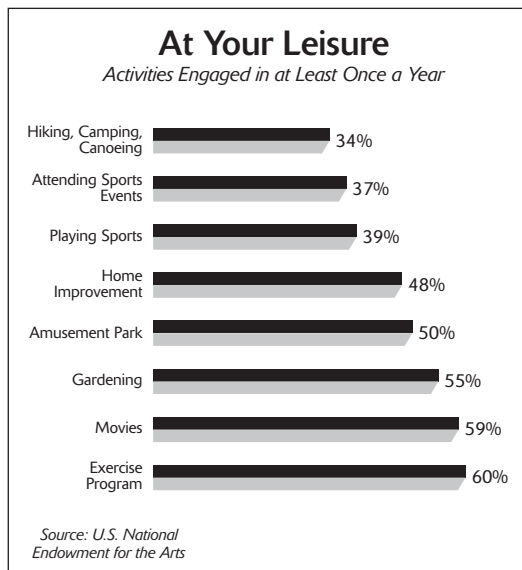
32. Two glasses, identical except for height, were filled with water and left side by side on a picnic table. The water in the taller glass took 16 days to evaporate, whereas the water in the shorter glass took 10 days to evaporate. What is the height (in inches) of the shorter glass?

(1) 10  
(2) 13  
(3) 16  
(4) 26  
(5) Not enough information is given.

33. It takes Jean 45 minutes to mow her grandmother's lawn. After a quarter hour of mowing, Jean's grandmother asked her to run to the store for a carton of milk, which she gladly did. What fraction of the lawn-mowing job had Jean completed before she left?

(1)  $\frac{1}{4}$   
(2)  $\frac{1}{3}$   
(3)  $\frac{1}{2}$   
(4)  $\frac{2}{3}$   
(5)  $\frac{3}{4}$

Questions 34 and 35 refer to the following graph.



**34.** The percent of people who go to movies is how much greater than that of people who play sports?

- (1) 59%
- (2) 49%
- (3) 39%
- (4) 20%
- (5) 10%

**35.** According to the graph, how many activities are engaged in at least once a year by **MORE** than 48% of the people?

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

**36.** Between which of the following pairs of numbers is the square root of 22?

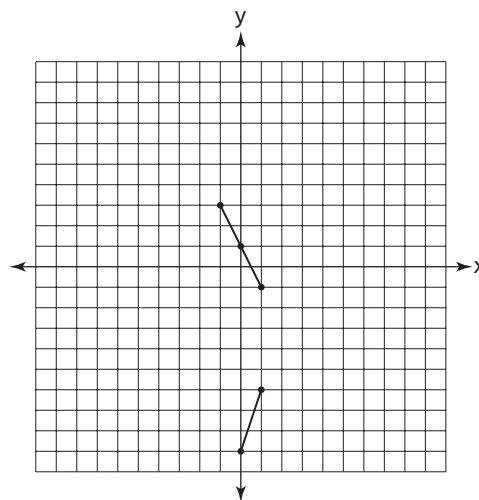
- (1) 2 and 4
- (2) 4 and 5
- (3) 5 and 8
- (4) 8 and 10
- (5) 10 and 12

**37.** The coordinate plane grid below shows parts of the graphs of the linear functions

$$y_1 = -2x + 1$$

and

$$y_2 = 3x - 9$$



What is the location of the point that is common to the graphs of both equations?

**DO NOT MARK YOUR ANSWER ON THE GRAPH ABOVE.**

Mark your answer on the coordinate plane grid on your answer sheet.

GO ON TO THE NEXT PAGE

- 38.** Keith appeared as a contestant on a television game show. All Keith had to do was correctly guess how many silver dollars were in the glass cookie jar, and he would win quadruple that amount. Keith won \$388. Which of the following equations could be used to determine how many silver dollars were in the jar?

- (1)  $d/4 = 388$
- (2)  $d - 4 = 388$
- (3)  $d + 4 = 388$
- (4)  $4(d + 4) = 388$
- (5)  $4d = 388$

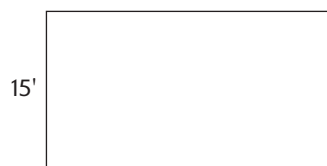
- 39.** Mario has three cats — Duke, Emily, and Frita. Emily weighs 4 pounds less than Duke, and Duke weighs 3 pounds more than Frita. Frita weighs 9 pounds. How much does Emily weigh?

- (1) 12
- (2) 10
- (3) 8
- (4) 4
- (5) 2

- 40.** Roberto and Linda were growing bacteria for a science experiment. At the end of the experiment, Roberto's culture had a population of  $4 \times 10^5$ , and Linda's culture had a population of  $8 \times 10^4$ . Which of the following statements would have been true at the end of the experiment?

- (1) The population of Linda's culture is four times as large as Roberto's.
- (2) The population of Roberto's culture is 20 times larger than Linda's.
- (3) The population of Linda's culture is twice as large as Roberto's.
- (4) The population of Roberto's culture is 5 times larger than Linda's.
- (5) Roberto's culture and Linda's culture are of equal population.

- 41.** Dolores has materials for 100 linear feet of fencing plus a 4-foot-wide gate. She is planning an enclosed, rectangular vegetable garden, which, due to the size of her yard, needs to be 15 feet wide, as shown in the diagram below.



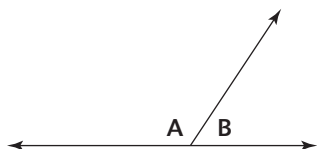
What is the maximum length (in feet) of Dolores's vegetable garden?

- (1) 37
- (2) 38
- (3) 44.5
- (4) 85
- (5) Not enough information is given.

- 42.** Erika's grandfather has a licorice rope 36 inches long, which he divides between Erika and her friend Tim. When the licorice is divided, Tim gets 8 inches more of the rope than Erika gets. How many inches of the licorice rope does Erika get?

- (1) 8
- (2) 14
- (3) 22
- (4) 28
- (5) 36

- 43.** In the diagram below, if the degree measure of angle A is twice the degree measure of angle B, what is the degree measure of angle A?



**PLEASE DO NOT WRITE IN THIS TEST BOOKLET.**

Mark your answer in the circles in the grid on your answer sheet.

- 44.** Slim has decided to buy lunch from the Vita-Value Vending Machine, which lists the following prices.

**VITA-VALUE VENDING MACHINE  
PRICE LIST**

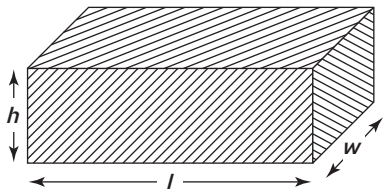
<i>soup</i> .....	75¢
<i>salad</i> .....	\$1.00
<i>sandwich</i> .....	\$1.20
<i>hot entree</i> .....	\$1.45
<i>beverage</i> .....	50¢
<i>dessert</i> .....	80¢

Slim has exactly \$3.05 in change. If he buys a salad and a beverage, which of the following combinations could he also afford to buy?

- (1) a sandwich and dessert
- (2) soup and dessert
- (3) soup and a hot entree
- (4) soup and a sandwich
- (5) a hot entree and dessert

GO ON TO THE NEXT PAGE

- 45.** The rectangular box shown below has the dimensions of  $l$ , by  $w$ , by  $h$ .



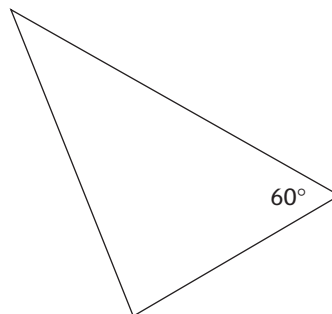
Which of the following equations could be used to determine the surface area ( $S$ ) of the rectangular box?

- (1)  $S = 6(lwh)$
  - (2)  $S = 4(lwh)$
  - (3)  $S = 2(lw) + 2(wh) + 2(lh)$
  - (4)  $S = lwh$
  - (5)  $S = l^2 + w^2 + h^2$
- 46.** What is the complete solution to the following equation?

$$x(x + 3)(x - 2) = 0$$

- (1)  $-3$  only
- (2)  $2$  only
- (3)  $-3$  and  $2$  only
- (4)  $3$  and  $-2$  only
- (5)  $0$ ,  $-3$ , and  $2$

- 47.** One angle of the triangle below is  $60^\circ$ . Of the two remaining angles, one is twice the other.



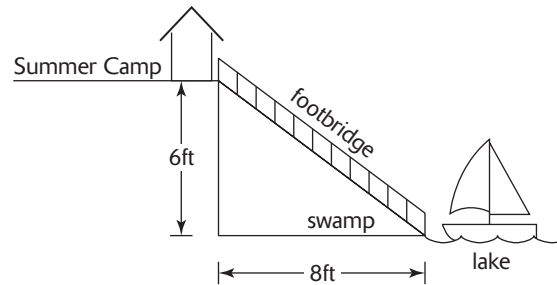
What are their measures (in degrees)?

- (1)  $100^\circ$  and  $200^\circ$
  - (2)  $60^\circ$  and  $120^\circ$
  - (3)  $50^\circ$  and  $100^\circ$
  - (4)  $40^\circ$  and  $80^\circ$
  - (5)  $30^\circ$  and  $60^\circ$
- 48.** Simon is buying a pickup truck that usually sells for \$12,000 but which has been discounted by 20%. Which expression could be used to represent the sale price?
- (1)  $.20(\$12,000)$
  - (2)  $(\$12,000) - .20$
  - (3)  $.20(\$12,000) + .20$
  - (4)  $\$12,000 - .20(\$12,000)$
  - (5)  $.20(\$12,000) - .20(\$12,000)$

- 49.** Miko gives Cecil a gumball machine for Cecil's birthday. He fills it with a mixture of 42 red gumballs and 36 yellow gumballs. What is the probability of getting a yellow gumball the first time the machine is used?

- (1)  $\frac{36}{42}$   
 (2)  $\frac{36}{78}$   
 (3)  $\frac{42}{78}$   
 (4)  $\frac{(42 - 36)}{78}$   
 (5)  $\frac{(42 + 36)}{78}$

- 50.** As shown in the diagram below, camp counselor Craig built a footbridge from the summer camp to the lake so that the campers will not have to crawl down a perpendicular 6-foot cliff and then trudge through 8 feet of swamp.



How long is the footbridge?

- (1) 14 feet  
 (2) 12 feet  
 (3) 11 feet  
 (4) 10 feet  
 (5) 9 feet

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT WORK ON ANY OTHER SECTION IN THE TEST.







# Scoring and Explanations for Practice Test 1

## SCORING PRACTICE TEST 1

Score your GED Practice Examination 1 by following these steps:

1. Check the answers you marked on your answer sheet against the Answer Key that follows. Put a check mark in the box following any wrong answer.
2. Fill out the Scoring Chart (p. 367).
3. Estimate your score on each test using the Score Approximators (pp. 368–370). Remember, these Score Approximators will give you a **very general** idea of how you are doing.
4. Read all the explanations (pp. 371–395). Go back to review any explanations that are not clear to you.
5. Finally, fill out the Reasons for Mistakes chart on p. 371.

Don't leave out any of these steps. They are very important in learning to do your best on the GED.

## Answer Key For Practice Test 1

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### LANGUAGE ARTS, WRITING

- |                                  |                                  |                                  |                                  |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 1. (4) <input type="checkbox"/>  | 14. (5) <input type="checkbox"/> | 27. (5) <input type="checkbox"/> | 40. (3) <input type="checkbox"/> |
| 2. (3) <input type="checkbox"/>  | 15. (4) <input type="checkbox"/> | 28. (3) <input type="checkbox"/> | 41. (3) <input type="checkbox"/> |
| 3. (4) <input type="checkbox"/>  | 16. (1) <input type="checkbox"/> | 29. (1) <input type="checkbox"/> | 42. (3) <input type="checkbox"/> |
| 4. (2) <input type="checkbox"/>  | 17. (2) <input type="checkbox"/> | 30. (2) <input type="checkbox"/> | 43. (1) <input type="checkbox"/> |
| 5. (3) <input type="checkbox"/>  | 18. (2) <input type="checkbox"/> | 31. (3) <input type="checkbox"/> | 44. (2) <input type="checkbox"/> |
| 6. (2) <input type="checkbox"/>  | 19. (1) <input type="checkbox"/> | 32. (2) <input type="checkbox"/> | 45. (1) <input type="checkbox"/> |
| 7. (5) <input type="checkbox"/>  | 20. (2) <input type="checkbox"/> | 33. (3) <input type="checkbox"/> | 46. (1) <input type="checkbox"/> |
| 8. (1) <input type="checkbox"/>  | 21. (3) <input type="checkbox"/> | 34. (4) <input type="checkbox"/> | 47. (4) <input type="checkbox"/> |
| 9. (2) <input type="checkbox"/>  | 22. (3) <input type="checkbox"/> | 35. (5) <input type="checkbox"/> | 48. (1) <input type="checkbox"/> |
| 10. (4) <input type="checkbox"/> | 23. (3) <input type="checkbox"/> | 36. (5) <input type="checkbox"/> | 49. (1) <input type="checkbox"/> |
| 11. (3) <input type="checkbox"/> | 24. (5) <input type="checkbox"/> | 37. (3) <input type="checkbox"/> | 50. (4) <input type="checkbox"/> |
| 12. (2) <input type="checkbox"/> | 25. (5) <input type="checkbox"/> | 38. (3) <input type="checkbox"/> |                                  |
| 13. (5) <input type="checkbox"/> | 26. (3) <input type="checkbox"/> | 39. (5) <input type="checkbox"/> |                                  |

**SOCIAL STUDIES**

- |                                  |                                  |                                  |                                  |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 1. (2) <input type="checkbox"/>  | 14. (2) <input type="checkbox"/> | 27. (2) <input type="checkbox"/> | 40. (3) <input type="checkbox"/> |
| 2. (2) <input type="checkbox"/>  | 15. (1) <input type="checkbox"/> | 28. (4) <input type="checkbox"/> | 41. (2) <input type="checkbox"/> |
| 3. (3) <input type="checkbox"/>  | 16. (3) <input type="checkbox"/> | 29. (5) <input type="checkbox"/> | 42. (4) <input type="checkbox"/> |
| 4. (5) <input type="checkbox"/>  | 17. (3) <input type="checkbox"/> | 30. (1) <input type="checkbox"/> | 43. (5) <input type="checkbox"/> |
| 5. (1) <input type="checkbox"/>  | 18. (5) <input type="checkbox"/> | 31. (2) <input type="checkbox"/> | 44. (1) <input type="checkbox"/> |
| 6. (4) <input type="checkbox"/>  | 19. (1) <input type="checkbox"/> | 32. (4) <input type="checkbox"/> | 45. (3) <input type="checkbox"/> |
| 7. (4) <input type="checkbox"/>  | 20. (2) <input type="checkbox"/> | 33. (4) <input type="checkbox"/> | 46. (1) <input type="checkbox"/> |
| 8. (3) <input type="checkbox"/>  | 21. (1) <input type="checkbox"/> | 34. (3) <input type="checkbox"/> | 47. (3) <input type="checkbox"/> |
| 9. (5) <input type="checkbox"/>  | 22. (3) <input type="checkbox"/> | 35. (2) <input type="checkbox"/> | 48. (3) <input type="checkbox"/> |
| 10. (5) <input type="checkbox"/> | 23. (3) <input type="checkbox"/> | 36. (5) <input type="checkbox"/> | 49. (4) <input type="checkbox"/> |
| 11. (2) <input type="checkbox"/> | 24. (2) <input type="checkbox"/> | 37. (1) <input type="checkbox"/> | 50. (4) <input type="checkbox"/> |
| 12. (1) <input type="checkbox"/> | 25. (5) <input type="checkbox"/> | 38. (1) <input type="checkbox"/> |                                  |
| 13. (3) <input type="checkbox"/> | 26. (1) <input type="checkbox"/> | 39. (4) <input type="checkbox"/> |                                  |

**SCIENCE**

- |                                  |                                  |                                  |                                  |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 1. (4) <input type="checkbox"/>  | 14. (5) <input type="checkbox"/> | 27. (3) <input type="checkbox"/> | 40. (1) <input type="checkbox"/> |
| 2. (3) <input type="checkbox"/>  | 15. (1) <input type="checkbox"/> | 28. (2) <input type="checkbox"/> | 41. (5) <input type="checkbox"/> |
| 3. (1) <input type="checkbox"/>  | 16. (5) <input type="checkbox"/> | 29. (5) <input type="checkbox"/> | 42. (1) <input type="checkbox"/> |
| 4. (1) <input type="checkbox"/>  | 17. (4) <input type="checkbox"/> | 30. (1) <input type="checkbox"/> | 43. (5) <input type="checkbox"/> |
| 5. (5) <input type="checkbox"/>  | 18. (3) <input type="checkbox"/> | 31. (1) <input type="checkbox"/> | 44. (2) <input type="checkbox"/> |
| 6. (3) <input type="checkbox"/>  | 19. (4) <input type="checkbox"/> | 32. (4) <input type="checkbox"/> | 45. (1) <input type="checkbox"/> |
| 7. (1) <input type="checkbox"/>  | 20. (1) <input type="checkbox"/> | 33. (5) <input type="checkbox"/> | 46. (3) <input type="checkbox"/> |
| 8. (5) <input type="checkbox"/>  | 21. (3) <input type="checkbox"/> | 34. (5) <input type="checkbox"/> | 47. (3) <input type="checkbox"/> |
| 9. (5) <input type="checkbox"/>  | 22. (3) <input type="checkbox"/> | 35. (2) <input type="checkbox"/> | 48. (4) <input type="checkbox"/> |
| 10. (3) <input type="checkbox"/> | 23. (2) <input type="checkbox"/> | 36. (2) <input type="checkbox"/> | 49. (5) <input type="checkbox"/> |
| 11. (3) <input type="checkbox"/> | 24. (4) <input type="checkbox"/> | 37. (1) <input type="checkbox"/> | 50. (5) <input type="checkbox"/> |
| 12. (3) <input type="checkbox"/> | 25. (2) <input type="checkbox"/> | 38. (4) <input type="checkbox"/> |                                  |
| 13. (2) <input type="checkbox"/> | 26. (3) <input type="checkbox"/> | 39. (5) <input type="checkbox"/> |                                  |

**LANGUAGE ARTS, READING**

- |                                 |                                  |                                  |                                  |
|---------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 1. (4) <input type="checkbox"/> | 6. (3) <input type="checkbox"/>  | 11. (3) <input type="checkbox"/> | 16. (3) <input type="checkbox"/> |
| 2. (1) <input type="checkbox"/> | 7. (1) <input type="checkbox"/>  | 12. (2) <input type="checkbox"/> | 17. (4) <input type="checkbox"/> |
| 3. (3) <input type="checkbox"/> | 8. (4) <input type="checkbox"/>  | 13. (4) <input type="checkbox"/> | 18. (3) <input type="checkbox"/> |
| 4. (1) <input type="checkbox"/> | 9. (5) <input type="checkbox"/>  | 14. (5) <input type="checkbox"/> | 19. (5) <input type="checkbox"/> |
| 5. (2) <input type="checkbox"/> | 10. (4) <input type="checkbox"/> | 15. (1) <input type="checkbox"/> | 20. (5) <input type="checkbox"/> |

- |                                  |                                  |                                  |                                  |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 21. (4) <input type="checkbox"/> | 26. (1) <input type="checkbox"/> | 31. (2) <input type="checkbox"/> | 36. (2) <input type="checkbox"/> |
| 22. (1) <input type="checkbox"/> | 27. (2) <input type="checkbox"/> | 32. (4) <input type="checkbox"/> | 37. (1) <input type="checkbox"/> |
| 23. (2) <input type="checkbox"/> | 28. (3) <input type="checkbox"/> | 33. (2) <input type="checkbox"/> | 38. (1) <input type="checkbox"/> |
| 24. (3) <input type="checkbox"/> | 29. (4) <input type="checkbox"/> | 34. (1) <input type="checkbox"/> | 39. (5) <input type="checkbox"/> |
| 25. (5) <input type="checkbox"/> | 30. (1) <input type="checkbox"/> | 35. (4) <input type="checkbox"/> | 40. (5) <input type="checkbox"/> |

## MATHEMATICS

- |                                   |                                      |                                     |                                  |
|-----------------------------------|--------------------------------------|-------------------------------------|----------------------------------|
| 1. (4) <input type="checkbox"/>   | 14. (4) <input type="checkbox"/>     | 27. (1) <input type="checkbox"/>    | 40. (4) <input type="checkbox"/> |
| 2. (5) <input type="checkbox"/>   | 15. (4) <input type="checkbox"/>     | 28. (4) <input type="checkbox"/>    | 41. (1) <input type="checkbox"/> |
| 3. (4) <input type="checkbox"/>   | 16. (5) <input type="checkbox"/>     | 29. (1) <input type="checkbox"/>    | 42. (2) <input type="checkbox"/> |
| 4. 2 <input type="checkbox"/>     | 17. (0,3) <input type="checkbox"/>   | 30. (3) <input type="checkbox"/>    | 43. 120 <input type="checkbox"/> |
| 5. 1,500 <input type="checkbox"/> | 18. (3) <input type="checkbox"/>     | 31. 15 <input type="checkbox"/>     | 44. (2) <input type="checkbox"/> |
| 6. (5) <input type="checkbox"/>   | 19. (1) <input type="checkbox"/>     | 32. (5) <input type="checkbox"/>    | 45. (3) <input type="checkbox"/> |
| 7. (2) <input type="checkbox"/>   | 20. (3) <input type="checkbox"/>     | 33. (2) <input type="checkbox"/>    | 46. (5) <input type="checkbox"/> |
| 8. (4) <input type="checkbox"/>   | 21. \$6,000 <input type="checkbox"/> | 34. (4) <input type="checkbox"/>    | 47. (4) <input type="checkbox"/> |
| 9. (1) <input type="checkbox"/>   | 22. 56 <input type="checkbox"/>      | 35. (4) <input type="checkbox"/>    | 48. (4) <input type="checkbox"/> |
| 10. (3) <input type="checkbox"/>  | 23. (5) <input type="checkbox"/>     | 36. (2) <input type="checkbox"/>    | 49. (2) <input type="checkbox"/> |
| 11. (4) <input type="checkbox"/>  | 24. (4) <input type="checkbox"/>     | 37. (2,-3) <input type="checkbox"/> | 50. (4) <input type="checkbox"/> |
| 12. 275 <input type="checkbox"/>  | 25. (2) <input type="checkbox"/>     | 38. (5) <input type="checkbox"/>    |                                  |
| 13. 170 <input type="checkbox"/>  | 26. (3) <input type="checkbox"/>     | 39. (3) <input type="checkbox"/>    |                                  |

## Scoring Chart

Use your marked Answer Key to fill in the following Scoring Chart.

	Possible	Completed	Right	Wrong
Language Arts, Writing, Part I	50			
Social Studies	50			
Science	50			
Language Arts, Reading	40			
Mathematics				
Part I	25			
Part II	25			
TOTAL	240			

Now, use this Scoring Chart to approximate your score on the following pages.

## Approximating Your Score

The following Score Approximators will help you evaluate your skills and give you a very *general* indication of your scoring potential.

### LANGUAGE ARTS, WRITING

To approximate your Language Arts, Writing score

1. Using the Scoring Chart, fill in the blank below with the number of questions you answered *correctly* on Part I: Multiple Choice.
2. Have an English teacher, tutor, or someone else with good writing skills read and evaluate your essay using the checklists given in Part III, How to Start Reviewing. Have your reader evaluate the complete essay as *good*, *average*, or *marginal*. Note that your paper would actually be scored from 1 to 4 by two trained readers. But since we are trying only for a rough approximation, the simple *good*, *average*, or *marginal* evaluation will give you a general feeling for your score range.
3. Use the following table to get an approximate score. Notice that the left-hand column lists your approximate score range with a marginal essay, the middle column with an average essay, and the right-hand column with a good essay.

Right answers on Part I: \_\_\_\_\_

Essay evaluation:      Marginal      Average      Good

<b>Number of Right Answers On Part I: Multiple Choice</b>	<b>Approximate Score with Essay Evaluation Range</b>		
	<b>Marginal Essay</b>	<b>Average Essay</b>	<b>Good Essay</b>
1-10	220-350	260-420	380-510
12-20	360-380	430-450	520-540
22-30	390-410	460-480	550-560
32-40	410-450	480-520	570-600
42-50	460-640	530-710	620-800

Remember, this is only an *approximate score range*. When you take the GED Language Arts, Writing Test, some of the multiple-choice questions may be easier or more difficult. The essay will be scored accurately by trained readers.

### SOCIAL STUDIES

To approximate your Social Studies score

1. Using the Scoring Chart, fill in the blank below with the number of questions you answered *correctly*.
2. Use the following table to match the number of right answers and the approximate score range.

Right answers: \_\_\_\_\_

<b><i>Number of Right Answers</i></b>	<b><i>Approximate Score Range</i></b>
2–10	200–320
12–20	340–400
22–30	410–470
32–40	480–550
42–50	570–800

Remember, this is only an *approximate score range*. When you take the GED Social Studies Test, you will have questions that are similar to those in this book. Some questions, however, may be slightly easier or more difficult.

## SCIENCE

To approximate your Science score

1. Using the Scoring Chart, fill in the blank below with the number of questions you answered *correctly*.
2. Use the following table to match the number of right answers to the approximate score range.

Right answers: \_\_\_\_\_

<b><i>Number of Right Answers</i></b>	<b><i>Approximate Score Range</i></b>
2–10	200–320
12–20	340–380
22–30	390–430
32–40	450–540
42–50	570–800

Remember, this is only an *approximate score range*. When you take the GED Science Test, you will have questions that are similar to those in the book. Some questions, however, may be slightly easier or more difficult.

## LANGUAGE ARTS, READING

To approximate your Language Arts, Reading score

1. Using the Scoring Chart, fill in the blank below with number of questions you answered *correctly*.
2. Use the following table to match the number of right answers to the approximate score range.

Right answers: \_\_\_\_\_

<b>Number of Right Answers</b>	<b>Approximate Score Range</b>
2–10	200–320
12–20	340–400
22–30	410–480
32–40	500–800

Remember, this is only an *approximate score range*. When you take the GED Language Arts, Reading Test, you will have questions that are similar to those in this book. Some questions, however, may be slightly easier or more difficult.

## MATHEMATICS

To approximate your Mathematics score

1. Using the Scoring Chart, fill in the blank below with the number of questions you answered *correctly*.
2. Use the following table to match the number of right answers to the approximate score range.

Right answers: \_\_\_\_\_

<b>Number of Right Answers</b>	<b>Approximate Score Range</b>
2–10	200–330
12–20	350–400
22–30	410–470
32–40	480–540
42–50	540–800

Remember, this is only an *approximate score range*. When you take the GED Mathematics Test, you will have questions that are similar to those in this book. Some questions, however, may be slightly easier or more difficult.

## REASONS FOR MISTAKES

Fill out the following chart *only after you have read all the explanations that follow*. This chart will help you spot your strengths and weaknesses and your repeated errors or trends in types of errors.

	<b><i>Total Missed</i></b>	<b><i>Simple Mistake</i></b>	<b><i>Misread Problem</i></b>	<b><i>Lack of Knowledge</i></b>
Language Arts, Writing Part I				
Social Studies				
Science				
Language Arts, Reading				
Mathematics Part I				
Part II				
TOTALS				

Examine your results carefully. Reviewing the above information will help you pinpoint your common mistakes. Focus on avoiding your most common mistakes as you practice. If you are missing a lot of questions because of “Lack of Knowledge,” you should go back and review the basics.

## Explanations, Practice Test 1

### LANGUAGE ARTS, WRITING

1. (4) No commas are needed in this sentence. It is incorrect to separate the verb (*write*) from its objects (*memos* and *letters*).
2. (3) Two complete sentences may be separated by a period, with the second sentence starting with a capital letter, as in option (3). This option creates two complete sentences from the original one. The sentences could also be separated by a semicolon and no capital letter, as in *description; what you write*. The original is incorrect, however, because no punctuation is needed between *description* and *and* as the sentence is written. It would be correct if it were written *description and that what you write*.
3. (4) The *having been* is not needed and doesn't fit with the present tense verb *are*. The sense of the sentence is “formal communications, not personal letters.”
4. (2) The plural verb (*initiate*) is needed to agree with the plural subject (*employees*) and with the other plural verb (*respond*).
5. (3) The revision in option (3) avoids the repetition of *this book*. The comma after *handbook* is correct before the *which* clause. The word *although* in choices (1) and (2) doesn't make sense in this context because it suggests that looking at the handbook isn't connected to helping the employees, which clearly isn't what's meant here. While choice (4) is grammatical, it doesn't do anything to avoid the wordiness of the two sentences.
6. (2) *Your*, a possessive pronoun, is incorrect here. What's needed is the contraction *you're*, which means *you are*.

7. (5) The error in the original is in parallelism. The three items following *help you* should be in the same form — *improve*, *enhance*, *seek* (rather than the original *to seek*). Although options (3) and (4) are parallel, they change the meaning of the original and create a sentence that no longer makes sense.
8. (1) There is no reason to change the *If* in the original sentence. The *concerns* or *questions* are not certain to happen, so *Although*, *When*, and *But* don't make sense. It also wouldn't make sense to contact the writer of the memo *before* there are concerns or questions. The revised sentence would be *If you have any concerns with or questions about these matters, please talk with me directly*.
9. (2) The comma between the subject of the sentence (*people*) and the verb (*catch*) is incorrect.
10. (4) The main subject of the first paragraph is the family of sunfish (or panfish), of which the crappie is a member. Sentences 1 and 2 deal specifically with catching crappie and would fit better in paragraph (C), which is entirely about how to catch them.
11. (3) *Their* is a possessive, but in this sentence, the contraction *they're*, meaning *they are*, is needed. The adverb *nicely*, rather than the adjective *nice*, is correct here.
12. (2) Sentence 8, in the original, is a sentence fragment. It's best combined with sentence 7 by placing the phrase *perhaps nine inches* next to the word it refers to, *size*. The revised sentence would read *In some places, a crappie must be a certain size, perhaps nine inches, before you can keep it*.
13. (5) The original sentence leaves out a necessary main verb. Only option (5) supplies this verb, *have*.
14. (5) The sentence is correct as written.
15. (4) This sentence has an error of agreement between a subject and its verb. The subject here is the singular *crappie*, so it requires the singular verb *shows*. Although the word *crappie* may be used as either a singular or plural, you can tell in this sentence that it is singular because of the word *a* that goes with it. The adverb *usually* is correct.
16. (1) Sentence 15 introduces types of bait and lures, including jigs. It most sensibly goes at the beginning of the paragraph, before the discussion of the colors of jigs.
17. (2) *Use a sharp knife* is a complete sentence without a conjunction such as *and* to begin it, so it must be separated by a semicolon, separated by a period and begun with a capital letter, or changed so that it is no longer a complete sentence. The only one of these options shown is the last, *using a sharp knife*.
18. (2) The first two words of the sentence are *Freeze them* (plural). None of the choices give you an option for changing these words. To be parallel with *freeze them*, *cook it* (singular) should be changed to *cook them*.
19. (1) The plural *were* is correct here, to agree with the plural *two types*. The past tense is needed because the sentence refers to a time *thirty years ago*.
20. (2) Although in answers (1), (3), and (5) the grammar is correct, answer (2) is the shortest and clearest version. Answer (4) is not a complete sentence. Answer (5) is also wrong because the present tense (*are*) does not agree with the first verb.



- 21. (3)** Answer (3) ends the first complete sentence with a period and begins a second complete sentence with *It*. Answers (2) and (4) would be right if there were a comma after *life*.
- 22. (3)** Since *a buyer* is singular, the apostrophe to show possession must come before the final *s*.
- 23. (3)** The subject of the sentence is the singular *cost*. The verb must be the singular *is* to agree in number.
- 24. (5)** The revision changes the verb *is* (active) to *is given* (passive). The subject (*a whole life policy*) of a sentence in the active voice will become the object of the preposition *by* (*by a whole life policy*) in a sentence in the passive voice.
- 25. (5)** The sentence is correct as written.
- 26. (3)** The spelling error in the sentence confuses *sails* (as on a boat) with *sales* (the selling of merchandise).
- 27. (5)** The sentence is correct as written.
- 28. (3)** The sense of the sentence calls for the plural *voters*. *Voter's* is a singular possessive and is incorrect here.
- 29. (1)** The sentence is correct as written. All of the choices other than the original create a sentence fragment with no subject and verb.
- 30. (2)** It was at the time the Department of Roads got the tax money that it made a promise to complete projects. So the best revision of the sentence makes that time sequence clear: “When the Department of Roads got a new gas tax several years ago, they promised. . . .” The revision also shortens the sentence and avoids repetition.
- 31. (3)** The earlier gas tax, the department’s promises, and the department’s excuse all occurred in the past, so the verb should also be in the past tense, *ran*.
- 32. (2)** The verb should agree in number with the plural *repairs*, so the change from the singular verb *isn’t* to the plural verb *aren’t* is correct.
- 33. (3)** The original sentence 10 is a sentence fragment. The revision of the sentences should do two things: repair the sentence fragment and make it clear what the *which* refers to. It is the *potholes* that have been there for years, so the phrase *which have been* should be placed close to that word: *repairs to the potholes, which have been there for years, on the highway near my house*.
- 34. (4)** The paragraph is about the gas tax, which was to be used for repairs that were never done. The sentence about the local library is completely off topic, and the paragraph would be better without it.
- 35. (5)** There are two problems with the original sentence. Saying that *neighbors* are *people* is repetitive (there’s no doubt that neighbors are people). And *that* is incorrect to refer to people; the pronoun, if used, should be *who*. The sentence “My neighbors feel the same way” is clear and less wordy than the original.
- 36. (5)** The sentence is correct as written.

- 37. (3)** The past tense verb *stood* is needed here. The comma sets off the introductory clause. *Has stood* describes an action that began in the past and is still going on in the present. For example, if the mill is still there, you would say, “The mill has stood for 40 years.” But in the passage, it is clear that the mill is gone.
- 38. (3)** The first part of sentence 4 repeats information already given in sentence 3 (the loss of mills and plants). An effective revision, one that avoids the repetition, could read, “In the last twenty years, the loss of dozens of mills and thousands of industrial jobs across the country occurred in part because industrial production. . . .” This is a difficult question on the effective combination of sentences.
- 39. (5)** The sentence is correct as written. The phrase *the number* is singular, and so the verbs (*has declined*, *has increased*) must also be singular. If *the numbers* were used, the verbs would have to be plurals (*have declined*, *have increased*). In each of the four changes, the subject and the verb do not agree.
- 40. (3)** There is no reason to separate the word *work* from the field in which the work is done. The phrase should read *now work in high-tech fields* without the comma.
- 41. (3)** The possessive of the pronoun *it* is *its* without an apostrophe. With the apostrophe, *it’s* means *it is*.
- 42. (3)** A semicolon is used in the same way as a period, and you should use it here to combine the two sentences. It is possible to use *and*, but you would have to put a comma between *industry* and *and*.
- 43. (1)** The original version is correct. The correct verb form is *were laid off* (past tense, passive voice); the comma is needed after *off*.
- 44. (2)** The noun *lesson* (something to be learned) ends in *on*. The verb *lessen* (to decrease) ends in *en*.
- 45. (1)** In the original sentence, *have one heard* is incorrect. You can say *has one heard* or *have you heard*, but only the second option is given in the choices. Also, since *you* rather than *one* is used elsewhere in the passage, changing to *have you* is the logical choice. Option (4) is incorrect because the quoted part of the sentence would begin with *can’t* rather than *as*. Option (5) is incorrect because the question mark refers to the whole sentence, not just the quoted material, and so belongs outside the quotation mark.
- 46. (1)** The commas after *hard-cooked* and *hard-boiled* are both correct. In the first version, both *hard-cooked* and *hard-boiled* have a hyphen, as they should, and both have an *a* before them. Two items like this should be in the same form. You need to keep the word *egg* in order to make clear *what* is hard-cooked and hard-boiled.
- 47. (4)** The second phrase should have the same verb form as the first (passive) — *reduced*, *kept*.
- 48. (1)** The *eggs* are prepared, not *you*. To prevent this misunderstanding, *hard-cooked eggs* must follow *way*. The form of the verb in answer (5) is wrong; *will take* (future tense) is right.
- 49. (1)** *To be sure* is the clearest and shortest revision.
- 50. (4)** The pronoun and verb (*they have been*) must agree in number with the plural word they refer to, *eggs*.

**SOCIAL STUDIES**

1. (2) The Compromise of 1850 offered inducements such as the admission of California as a free state and a federal fugitive slave law, but the agreement soon proved inadequate in resolving the growing tension between the North and South.
2. (2) People can join political parties and urge their elected representatives to support laws that benefit their interests and concerns.
3. (3) E-mail enables people to send and receive responses in a very short period of time, so the postage stamps needed to send letters through the U.S. mail are not needed.
4. (5) The Strait of Gibraltar is between Spain and North Africa.
5. (1) With so many workers dead from the plague, people had to come up with ways to get work done. This encouraged the invention of labor-saving tools and machines.
6. (4) In 1977, the median price of a home in St. Louis was less than \$40,000. In the four other cities, the price was more than \$40,000.
7. (4) The price increased from about \$51,000 to \$110,000, or \$59,000 — more than 100% of \$51,000, but not more than 200%.
8. (5) In St. Louis, the increase was only \$48,000 — from about \$37,000 to about \$85,000.
9. (3) The West Coast cities in the graph (San Francisco and Los Angeles) had higher median prices in 1987 than did the East Coast cities (Baltimore, New York, and Washington, D.C.) or the Midwest cities (Chicago and St. Louis).
10. (5) The largest dollar amount increase was in San Francisco — from about \$72,000 to about \$169,000, or about \$97,000. Of the five cities listed, Los Angeles was second (about \$78,000).
11. (2) Da Vinci saw little value in imitating others and felt an artist's best work came from directly observing nature and natural objects.
12. (1) Industrialization of the United States required rules that would deal with unethical practices. Because industry was not inclined to police itself, government found itself being called on to see that fair standards would be observed.
13. (3) Government provided a forum for debate but failed to enact meaningful laws to deal with the issues industrialism raised.
14. (2) The tropical rain forests have yielded a wide variety of medicines to treat diseases such as malaria. To date, little hydroelectric power, agricultural production, or timber has come from the rain forests.
15. (1) The two levels of government are national and state. Examples of state government functions include issuing marriage licenses and setting highway speed limits. The national government deals with the concerns of the entire nation.
16. (3) In questions of ultimate political authority, the Supreme Court ruled that the U.S. Constitution has the superior power over the states, and the national government interprets the Constitution.
17. (3) In the colonial period, Parliament opposed granting the colonies the right to deal with domestic issues, arguing that sovereignty could not be so divided.

18. (5) The birth in the United States assures U.S. citizenship; he is also a citizen of Florida, the state where he lives.
19. (1) Theodore Roosevelt used his presidential authority to call for a strong Navy as well as to deal with issues of capital and labor, consumer protection, and monopolistic abuses.
20. (2) Because he favored regulation rather than breaking up big businesses, Roosevelt's image exceeded his performance.
21. (1) Reformers within the Democratic and Republican parties joined with the Progressive Party to work for political and economic reforms within the existing political system.
22. (3) The change from work done by hand to work done by machine power gradually revolutionized the manufacturing of products, with results that also transformed society.
23. (3) The initiative process enables the citizens (electors) of the state to propose legislation directly.
24. (2) The initiative process is a state election vote with no effect on federal laws (as opposed to state laws).
25. (5) Section (b) states that 8% of the number of voters in the last gubernatorial election (election of a governor) is needed for an amendment of the state Constitution.
26. (1) The British failed to capture Fort McHenry, a task necessary in order to move on and capture Baltimore. Key observed the battle and how the American flag still flew the morning after the bombardment.
27. (2) In 1929, unemployment was lower than in the other years, and prices, stock prices, and wages were higher.
28. (4) Farm prices are recorded in the lower part of the columns in the third graph. They were lowest in 1932.
29. (5) In 1930, farm prices were at approximately 130 points; by 1932, they had fallen about 60 points — to about 70.
30. (1) The first graph shows that unemployment dropped only in 1929.
31. (2) The distinctive onion-shaped domes identify the buildings as Russian.
32. (4) Georgia is on the Atlantic Ocean just north of Florida.
33. (4) Alaska is farther north than the area covered by this map.
34. (3) Missouri is in the Midwest, the central part of the United States, which is in the Central time zone.
35. (2) Slave-owners make up 25% of the graph. Of these, the largest share is the 7% of all white Southerners who owned between two and four slaves. Those Southerners who owned *no* slaves make up the largest part of the graph, but the question asks only about *slave-owners*.
36. (5) The smallest percentage is the three-quarters of 1 percent who owned 50 or more slaves.
37. (1) The small bar graph gives the number of families who did not own slaves as 1,149,979. Choice (2) is wrong because the small bar graph gives the number of slave-owners as 383,635, fewer than 500,000. At first glance, you might think that choices (3), (4), and (5)

are true. However, notice that the percentages given are percentages of the *total number of white Southerners*, not the *total number of slave-owners*.

38. (1) Of the 25% of the population who were slave-owners, 5% owned one slave, and 7% owned between two and four. Even if the entire 7% owned only two slaves, there would still be more than half the slave-owners who owned five or more slaves.
39. (4) The quorum requirement will make sure that at least 51 senators are present before legislation can be passed.
40. (3) To change the majority of the Senate from 51 to 52 would require an increase in the size of the Senate from 100 to 102. Of the five choices, only the admission of a 51st state would have this effect.
41. (2) This is an example of the spoils system, which refers to the jobs to which the mayor-elect appoints his relatives and friends.
42. (4) This is an example of insider information (that the land is to be developed) being used for personal profit by the banker. It could be said that this is a conflict of interest situation, but the specifics of the case more clearly refer to insider information.
43. (5) This is an instance of consumer fraud. The jewelry delivered was not of the high quality that the jeweler advertised.
44. (1) This is a conflict of interest situation in which the agent's responsibility to the city may conflict with a self-interested wish to promote the office supply company that he or she owns.
45. (3) This is an instance of election fraud.
46. (3) Alarmed at the execution of Louis XVI and Marie Antoinette, as well as thousands of French aristocrats, England, Austria, and other European nations saw French radicalism as a threat to their own rule.
47. (3) The French army differed from earlier armies in its recruitment of nonprofessionals as soldiers and the requisitioning of supplies from residents through whose lands the army traveled. This made it possible for France to raise large armies and move them around quickly.
48. (4) The second of the two graphs shows metals at 700.
49. (4) The first graph shows meats at 190 and grains at 210 at the end of the third quarter. The difference is 20.
50. (4) Unlike other Asian countries, Japan did not succumb to Western imperialist political influence, though it did adopt many examples of Western technology.

## SCIENCE

1. (4) The image of the object forms on the retina, a light-sensitive tissue that produces electrical signals to be sent on to the optic nerve. The purpose of the iris, cornea, and lens is to focus the light onto the retina so that a sharp image is formed.
2. (3) When the retina gets the image, it has been transposed (turned upside down). The optic nerve sends the image as it is to the brain. The brain makes the adjustment by transposing the image so that it is right side up.

3. (1) Because alcohol has a lower boiling temperature than water does, when the solution is heated, the alcohol boils first.
4. (1) The information given with this question says that the “largest numbers of moose” are found in the “cone-bearing” (coniferous) area of “Canada and the northern United States.”
5. (5) The tundra is the treeless Arctic region with a brief, cool summer. Such a cold area can support only small plants that are unusually resistant to low temperatures. The information tells you that the tundra has “bushes and other low-growing plants.” “Mosses, lichens, sedges, and grasses” are all low-growing plants. Because the question did not mention any trees, you should have quickly decided against the first two answers.
6. (3) Plants must grow and flower to produce seeds to keep the species alive. The rare rainstorms in the desert require plants to reproduce quickly or die.
7. (1) The mixed forest contains some coniferous trees (pines, firs) and some deciduous trees (maples, oaks). So, it is logical to decide the mixed forest is the area where the coniferous forest meets the deciduous forest. Because evergreen trees tend to live in colder regions, they would be found north of the mixed forest.
8. (5) As in any metal, and, as the diagram shows, the gold atoms are touching; therefore, the alpha particles had to pass through the gold atoms. Because most of the particles passed straight through the foil, you can think of each atom as being mostly empty space. An atom has a few electrons that revolve around a very small nucleus.
9. (5) The palm tree is most truly independent. Green plants get their energy from sunlight and store that energy as sugar. Animals cannot be independent because they get their energy by eating plants (as sheep do) or other animals (as codfish, cougars, and mosquitoes do).
10. (3) The job, or function, of the lungs in a person is similar to the function of the gills in a fish. Human lungs allow oxygen from the air to enter the bloodstream. Almost all animals require oxygen to live.
11. (3) Inside the aerosol can is the actual product and a compressed gas. That gas is stored under high pressure. Notice that the question mentions “pressurized” cans. Pressing the top button allows the gas to escape toward lower pressure in the surrounding air. As gas escapes to the lower pressure, it also pushes out the product (such as cream or hairspray).
12. (3) It is to the advantage of each insect species to avoid being eaten. Many insect species have adapted to have bright colors for protection. Apparently many of their enemies (for example, monkeys) have learned that “bright colors” means a bad taste. Even insects that don’t taste bad to monkeys would find bright colors a helpful protection.
13. (2) The several stamens are the source of the male pollen cells. The bee gets coated with pollen as it enters and leaves the flower in search of nectar. It is logical that the pollen would be between the bee and the nectar.
14. (5) All lakes are gradually filling up with sediments. Rivers and streams wash particles of clay, silt, and sand into the lakes, where the particles settle in the still water. Choice (4) is incorrect because pollution is not a *natural* process.



15. (1) The paragraph mentions the simplifying of form as an example of regressive evolution. Whales have no hind legs, but they developed from a mammal with two pairs of legs. The whale's streamlined body is simpler than its ancestor but better adapted to its environment.
16. (5) The change or mutation of a gene must be passed on to the offspring of a plant or animal if that characteristic is to be spread to the whole group.
17. (4) The paragraph says that “new species develop from unspecialized or simple forms” of animals or plants. Highly adapted animals like the dinosaurs rarely are the ancestors of new species.
18. (3) The paragraph says that “evolving depends on . . . isolation to establish new species.” Isolation, such as that on islands, gives an opportunity for characteristics to concentrate and become established in a given population.
19. (4) All flies reproduce rapidly, but fruit flies have two additional advantages: They have genetic variations that are easy to see, such as eye color and wing type, and they are small and easy to care for, growing happily in bottles of mashed bananas. Choices A and D would be good reasons *not* to use a species to study gene mutation.
20. (1) The high altitude of such land features is not evidence in favor of a shoreline origin. Instead, the high altitude of the features is a puzzle to be solved.
21. (3) Because the magnetism is “produced by a powerful electric current,” interrupting the current would cause the magnetism to disappear. Choice (2) is wrong because the magnetism is caused by any electric current that changes its strength or direction of flow.
22. (3) Habit requires repeating an event again and again. The rat runs through the maze a little faster each time because it learns by habit. The chimpanzee wants to eat the banana, so its learning would be called problem solving or *motivation*. Both the rattlesnake (4) and the bird (5) behave by *instinct* without having to repeat the event. (A rat in an experiment is also often motivated by a reward at the end of the maze.)
23. (2) Argon is atom B in the chart. Each element is defined by the number of protons in the atomic nucleus. The 18th element, argon, has 18 protons in each atom. In the same way, the last column of the chart reveals atoms of elements number 16, 17, and 19.
24. (4) The electrical charges on the three types of subatomic particles, as shown at the top of the chart, are electron  $-1$ , neutron  $0$ , and proton  $+1$ . An atom with a positive charge has more protons than electrons, so the right answer is atom D (19 protons and 18 electrons). Atoms A and B are electrically neutral, because the number of protons equal the number of electrons. Atom C has a charge of  $-1$ , and atom E has a charge of  $-2$ .
25. (2) The information below the chart says that “isotopes of one chemical element have the same number of protons but a different number of neutrons.” Only atoms A and D have the same number of protons (19). Also, the second column shows that their number of neutrons is different (21 and 20).
26. (3) The information below the chart says that the “atomic weight of an atom is the sum of the protons and neutrons.” Here are the five atomic weights: A is 40; B is 40; C is 37; D is 39; and E is 34. The range from lowest to highest is 34 to 40.

- 27. (3)** The information says that “each new cell has the same chromosomes as the original cell.” So, there will be 24 chromosomes in each of the new cells.
- 28. (2)** Electric power plants are the main source of sulfur dioxide pollution. Coal is the most common fuel in electric power plants, where the heat from burning the coal produces steam, which is used to turn the electric generators. Some electric power plants burn oil or natural gas, which also yield sulfur dioxide fumes.
- 29. (5)** White light enters the glass prism, but several colors leave the prism. The prism has separated white light into its basic colors, showing that white light is a mixture. Choice (4) is wrong because the experiment does not show any reflection of light backward.
- 30. (1)** The sharpest downward slope in the graph is from 1930 to 1940. This sharp slope shows the greatest decline (drop). By reading the numbers, you can see that the number of deaths dropped from 70 to 40, a drop of 30, which is greater than any of the other drops.
- 31. (1)** The fact that the number and the arrangement of bones are the same could not be a coincidence. The two structures must be inherited from the front limb of a mammal that is an ancestor of both humans and whales. The relationship is best described as *homology*.
- 32. (4)** This is a case of two animals of similar lifestyles and many structures that seem very much alike. Both of the animals live in water, are streamlined for swimming, and use fins and flippers to control their movements. These similarities have appeared despite their different ancestors. This is best described as *convergence*.
- 33. (5)** The passage states that the great variety of mammals has come from one ancestor, the earliest mammal. So, all the differences between mammals have developed with the passing of time. The origin of such differences is called *divergence*. It is the most obvious and basic feature of the evolution of life.
- 34. (5)** The two balls had the same shape but were of different weight. So, Galileo discovered that the time of falling did not depend on weight. The experiments in a vacuum (to avoid air resistance) showed that feathers and lead balls fell at exactly the same rate.
- 35. (2)** The adaptations described in choices (1), (3), (4), and (5) show the development of a feature that helps a plant or animal to perform better in its environment. Flowers need to be seen by bees for pollination. Some squirrels use flight to escape enemies. Scorpions defend themselves by stinging. Ducks use their feet to swim. However, a mole lives underground, and its eyes are almost useless; the eyes are explained as being inherited from some ancestor that lived on the surface.
- 36. (2)** The definition of a chemical element is that it cannot be separated into simpler substances. The burning of sugar to give carbon dioxide (CO<sub>2</sub>) and water vapor (H<sub>2</sub>O) shows that sugar must contain at least two simpler substances: carbon and hydrogen. The oxygen in those gases comes from both the air and the sugar.
- 37. (1)** Mice and people are not the same, so a chemical might affect them differently. The question asked for a *scientific* objection, but choice (3) concerns ethics, and choice (4) concerns economics. Choice (5) is not right because all rodents are mammals, too.
- 38. (4)** Sound travels as a pattern of vibrating molecules, so it does not use electromagnetic waves. The other four choices — light, microwaves, radio, and television — are all electromagnetic.



- 39. (5)** Once underground water is poisoned, it is almost impossible to clean up. Furthermore, the connections between underground resources are not well understood. Although pollution is a problem in all water sources, it is easiest to discover and clean up in surface waters. Because the question mentions the word *unseen*, you could decide on choice (5) because it is the only water source not easily *seen*.
- 40. (1)** The space shuttle could not land on the moon because the moon lacks an atmosphere to glide down on and a runway for landing. All the other choices are regular functions of the space shuttle.
- 41. (5)** Each molecule of water (H<sub>2</sub>O) contains two hydrogen atoms and one oxygen atom. So, the decomposition of water gives exactly twice as many hydrogen atoms as oxygen atoms.
- 42. (1)** *Buoyancy* is the power of a fluid to exert an upward force on any body placed in the fluid. The force equals the weight of the fluid moved out of the way by the body. When Arminta gets into the swimming pool, she moves away water that weighs as much as she does, so she floats. Choice (3) is wrong because most of her body is below the surface.
- 43. (5)** A boy and a girl cannot have the same genetic makeup because their sex chromosomes are different. They cannot be identical twins. The boy and the girl came from two separately fertilized cells — a conclusion that is definite rather than only probable.
- 44. (2)** The question says that inertia means that a “moving object will continue moving in the same direction and at the same speed.” A hockey puck sliding on ice is a fine example of the inertia of a moving object because the friction is so low that it slows down very gradually.
- 45. (1)** On some beaches, the wave action is just right to wash away the mud and sand, leaving the heavy gold particles behind. Without the sorting action of the waves, the percent of gold would be too low to be worth mining. The question mentions the gold deposits “inland,” so choices (2), (3), and (5), which mention gold coming from the sea, are not good choices.
- 46. (3)** The soft tissue would break down and disappear if decay bacteria were present. These bacteria exist wherever some oxygen is present, and those locations are near the air. The most isolated material of the five choices would be the mud at the bottom of a lake. The water and the mud would prevent air from reaching the organic tissues.
- 47. (3)** Both creatures benefit from their association. The termite gets food from the cellulose that is digested by its tiny inhabitants. Those little parasites get much of their food from the termite. Such a relationship of benefit to both animals is called *symbiosis*.
- 48. (4)** The simplest relationship is case B, in which one gene controls one characteristic. Anything more complicated makes research much more difficult. Biologists have discovered that the complicated cases A and C are very common.
- 49. (5)** The human body does not *need* caffeine. The second paragraph says that “caffeine is a nonessential [unneeded] chemical for human life. It is not a protein, fat, mineral, vitamin, or carbohydrate.”
- 50. (5)** Caffeine is found in many soft drinks.

**LANGUAGE ARTS, READING**

1. (4) By line 8, it becomes clear that the writer has been referring to penguins since the beginning of the poem.
2. (1) When the writer says “we do love penguins” (line 8) and then goes on to describe what is attractive about them, she suggests that most people love penguins.
3. (3) The first eight lines end with a question mark, and line 9, “They make us feel good about something,” begins to answer that question.
4. (1) The spies go to the Antarctic “to eavesdrop on [watch] what they [penguins] do there.”
5. (2) The writer is writing here about *us* (people — line 5), so the word *our* in line 7 also refers to people. *Scant fondness* means *little* or *not much* fondness.
6. (3) From the excerpt, it is clear that Milkman is very bothered by his short leg and doesn’t want anyone to notice it (lines 3–4). His response to Lena is triggered by her comments about the way he walks. Choice (4) might seem like a plausible answer, but there is no evidence to suggest that Lena “always makes fun of” Milkman.
7. (1) The context of the word *affected* suggests that this is the correct definition; the walk is described as the strut of a young man “trying to appear more sophisticated than he was” — in other words, trying to create an impression.
8. (4) See lines 30–32. Choice (1) is simply incorrect, and although (2), (3), and (5) may possibly be true, they are not cited as the reason that Milkman feels a connection with FDR.
9. (5) Several details support this answer. Milkman slouches, leans, or stands with his hip thrown out (lines 6–7), sits with his left ankle over his right knee (line 21–22), and dances stiff-legged (line 23–24) — all to disguise his short leg. That he sees it as a “burning defect” rules out (1) and (4). He does not avoid contact with others — (2) — for example, he dances and plays basketball — and although he feels a connection with President Roosevelt, there is no evidence that he “fantasizes” about their similarity — (3).
10. (4) See line 38. Milkman feels little connection with his father because Macon has “no imperfections,” not because Macon is cold and distant — (1). There is also no evidence that Macon despises Milkman — (5). In fact, Macon’s feelings are not shown in the excerpt. Line 39 says that Milkman “fears” Macon but does not indicate that this leads to the boy avoiding his father — (3).
11. (3) Various details in the excerpt suggest that Milkman is both self-conscious (for example, he tries to disguise his short leg) and strong willed (in spite of his shortcoming, he dances and plays basketball, and is determined to be as different as possible from his father). Choices (1), (4), and (5) are too extreme to describe Milkman, and choice (2) is contradicted by details in the excerpt.
12. (2) The context suggests that the “fundamental materials,” while still used, were used in “unusual” ways.
13. (4) The writer gives several examples of very different kinds of sculpture and thereby emphasizes its variety.

14. (5) The first sentence says that a *Parisian* or *New Yorker* (people) in 1886 (about 100 years ago) would have said that sculpture was *statues* — (5).
15. (1) None of the other choices is a logical or sensible meaning for this statement.
16. (3) The writer says that “a sculptor could use any kind of junk” (lines 64–65) and goes on to identify the materials mentioned in this question as junk.
17. (4) The third paragraph says that sculpture “wanted the liberty that painting had already claimed.” Choice (2) is wrong because *popular need* means a need of the general public, and the sentence talks only about what *sculpture* wants.
18. (3) In their first two speeches, both women are very polite; however, by the time the scene ends, they are insulting one another.
19. (5) The two women stop using terms of endearment, such as *dear* and *darling*, which shows the change in the way they feel (attitudes).
20. (5) Each woman mentions a newspaper, an engagement announcement, a diary, and the ensnaring (entanglement, entrapment) of Ernest; however, only Gwendolen refers to *moral duty* (line 48).
21. (4) Cecily uses the phrase to tell Gwendolen that she is speaking plainly and truthfully and is not pretending that something is what it isn’t.
22. (1) Gwendolen pretends that Cecily’s figurative language (she isn’t really talking about a spade; she is talking about being truthful) is literal (which would mean that she really *is* talking about a shovel). Gwendolen is suggesting that a person in her high social class would never come in contact with anything so low class as a spade. The effect of the line, and of the whole scene, is comical.
23. (2) The first paragraph describes only the dust-blanketed earth and dust-filled sky, not the people (1). Nowhere in the paragraph is there a statement about the causes of the dust — (3) — or about what affect it will have on the farmers — (5). Although words such as “blanket,” “blanketed,” “sifted,” and “settled” might suggest a mood of peacefulness — (4), in the context of this paragraph and in combination with the image of blood, they do not convey such a mood.
24. (3) There are other comparisons in the paragraph (such as the sun’s color being compared to “ripe new blood”), but of the answers provided, only (3) is correct.
25. (5) Although it is not directly stated, the excerpt strongly suggests that it is the men’s spirit that must not be broken by the dust storm. See lines 16–18.
26. (1) This line is the turning point, because in it the men lose their “bemused perplexity” and become “hard and angry and resistant,” showing that their spirits have not been broken. Up until this line, the women and children are worried that the men will break.
27. (2) In the first part of the excerpt, these people seem to be without hope — (1). However, the excerpt as a whole shows them to be tough and able to withstand misfortune. Choice (3) may also seem like the correct answer, but although the men are “hard” and “angry,” they are “thinking” and “figuring” at the end of the excerpt, not nursing their bitterness.

- 28. (3)** The author uses an almost Biblical style in this passage. Several words and phrases are repeated throughout, such as “sifted,” “blanketed,” “break,” “stood,” “sat,” “all right,” and “came out of the houses.” Three sentences begin with “And.” The dominant sentence structure is subject-verb: “people came,” “children came,” “men stood,” “children stood,” “men sat,” and so on. There is no description of individuals **(1)**, no “before and after” contrast **(2)**, and neither monologue nor dialogue **(4)**. Although the image of blood is used in the first paragraph, it does not appear throughout the excerpt **(5)**.
- 29. (4)** This is the best answer. The excerpt emphasizes the people’s endurance. They are not defeated by the dust storm. In the novel as a whole, the Joad family shows the same ability to survive, in spite of terrible hardships. The tone of the novel may be grim, but it is not pessimistic — **(5)**. Choices **(1)**, **(2)**, and **(3)**, while present in the novel, are not the dominating theme.
- 30. (1)** See lines 11–12. Choice **(2)** is incorrect; you may always pay your balance in full. Choice **(3)** is also incorrect; \$1.00 will be added to the finance charge if the minimum payment is calculated in that way. Choice **(4)** is contradicted in lines 35–36, and **(5)** is contradicted in lines 62–64.
- 31. (2)** “Deferred payment balances” are sometimes offered as a special promotion (lines 17–18). Choices **(1)**, **(3)**, **(4)**, and **(5)** do not make sense in this context. Choice **(2)** is the best answer.
- 32. (4)** See lines 58–60. Paying your bill at the wrong location may lead to a delay in processing, which in turn may lead to a late fee. The amount of your charges has nothing to do with paying a late fee — choices **(1)** and **(2)**. Deferred payments — **(3)** — refer to special situations to your benefit and, therefore, are unrelated to a late fee. Choice **(5)** is also incorrect; having a finance charge on your account does not lead to an additional late fee unless you do not pay your bill on time.
- 33. (2)** See lines 2–4, 9–10. Notice the word “current,” which indicates that the balance at the end of the billing cycle, not the beginning, would determine the minimum amount due. Choice **(1)** is incorrect; in determining a minimum payment, \$1.00 is added to any finance charges. Cash transaction fees are included in your current account balance, so answer **(5)** is incomplete.
- 34. (1)** See line 17. Deferred payment balances are not included in calculating your minimum payment because they are postponed. This rules out **(4)**. Because these balances are deferred, they will have no bearing on your finance charges — choices **(2)** and **(3)**. The passage makes no reference to any fee charged for deferred payment balances **(5)**.
- 35. (4)** The second paragraph states Mr. Nonell’s conclusion that Matilde “had been taking a little tippie now and then” until “she had emptied it all by herself.”
- 36. (2)** This choice summarizes the meaning of the final sentence.
- 37. (1)** The last paragraph says that Matilde had been an *ideal servant* for forty-seven years.
- 38. (1)** The first paragraph emphasizes how Mr. Nonell feels after his lunch with a friend, and the rest of the passage emphasizes what he thinks about the disappearance of the anisette.
- 39. (5)** Mr. Nonell suspects that Matilde has been sipping his anisette “in the belief that . . . Mr. Nonell was doing the same.” She does not know (he thinks) that Mr. Nonell has given up liquor.

- 40. (5)** Line 18 says that Mr. Nonell takes the bottle of anisette out of the formerly “well-stocked liquor cabinet,” and the excerpt goes on to describe Matilde’s little tippie now and then. (line 32) “Tippie” is a word that is used for drinking liquor. So, it is logical to decide that anisette is a kind of liquor.

## MATHEMATICS

- 1. (4)** Note that the scale on the left says “gallons.” So

$$1950 = 30,000 \text{ and } 1970 = 45,000$$

$$\begin{array}{r} 45,000 \\ - 30,000 \\ \hline 15,000 \text{ increase} \end{array}$$

- 2. (5)** To find the median, first list the items in order, and then count halfway in:

$$\$35 \quad \$40 \quad \$55 \quad \$60 \text{---} \$70 \quad \$75 \quad \$80 \quad \$90$$

Since there is an even number of terms, halfway is between \$60 and \$70. So, merely take the average of the two. You can see that halfway between 60 and 70 is 65, so 65 is the median. (The average of  $60 + 70 = 130$  is  $65$ .)

- 3. (4)** The motorcycle has been discounted by 10%, so the buyer will pay 90% of the original price. You need to find 90% of \$1000. The symbol “%” means *out of 100*, “of” means *multiply*, and “is” means *=* (or equal to).

To use fractions:

$$90\% \text{ of } 1000 = \frac{90}{100} \times \frac{1000}{1} = 90 \times 10 = 900$$

To use decimals:

$$90\% \text{ of } 1000 = .90 \times 1000 = 900$$

- 4. 2** To solve the equation, first subtract 16 from each side:

$$\begin{array}{r} 8x + 16 = 32 \\ - 16 \quad - 16 \\ \hline 8x = 16 \end{array}$$

Next, divide each side by 8:

$$\frac{8x}{8} = \frac{16}{8}$$

So,  $x = 2$ .

- 5. 1,500** In 1993, 30% of the homes in the survey had personal computers. So, 30% of 5,000 is  $.30 \times 5,000 = 1,500$ .
- 6. (5)** The line segment with the sharpest slope upward shows the greatest increase. This occurs between 1997 and 1999.
- 7. (2)** In 1985, approximately 15% of homeowners had personal computers. Notice that the point for 1985 is about halfway between 10% and 20%.

- 8. (4)** The Pythagorean theorem states that given a right triangle with legs  $a$  and  $b$ , and hypotenuse  $c$ ,

$$a^2 + b^2 = c^2$$

Using Russell's mileage:

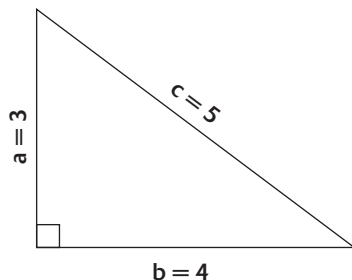
$$3^2 + 4^2 = c^2$$

$$9 + 16 = c^2$$

$$25 = c^2$$

$$5^2 = c^2$$

$$5 = c$$



- 9. (1)** Substitute 2 for  $x$  and 11 for  $y$ :

$$w = 4x(y - 5)$$

$$w = 4(2)(11 - 5)$$

$$w = 4 \times 2 \times 6$$

$$w = 8 \times 6$$

$$w = 48$$

Note that you should do the math in the following order:

1. parentheses — for example,  $6(2 + 1) = 6(3)$
2. powers — for example,  $2 + 2^2 = 2 + 4$
3. multiply and divide from left to right — for example,  $2 + 2 \times 5 = 2 + 10$
4. add and subtract from left to right — for example,  $2 + 2 - 1 = 3$

- 10. (3)** You need to find 15% of what the packages are worth, so you could begin by finding their total worth:

$$\$820 + \$470 + \$210 = \$1500$$

Then, find 15% of \$1500 (The symbol “%” means *out of 100*, and “of” means *multiply*.)

$$15\% \text{ of } \$1500 = .15 \times \$1500 = \$225.00$$

Or if you prefer fractions:

$$\frac{15}{100} \times \frac{1500}{1} = \frac{15}{100} \times \frac{1500}{1} = \$225$$

- 11. (4)** To find the area of the rectangle, simply multiply the length times the width:

$$3x \times 4x = 12x^2$$

- 12. 275** If  $5\frac{1}{2}$  cups of flour  $\rightarrow$  2 loaves,  
then ? cups  $\rightarrow$  100 loaves.

Because  $50 \times 2 = 100$ , you will need 50 of these 2-loaf batches. In other words, you will need  $50 \times 5\frac{1}{2}$  cups of flour:

$$50 \times 5\frac{1}{2} = \frac{\overset{25}{\cancel{50}}}{1} \times \frac{11}{\cancel{2}_1} = 25 \times 11 = 275$$

Or if you prefer decimals:

$$50 \times 5\frac{1}{2} = 50 \times 5.5 = 275$$

- 13. 170** To find the mean (average):

Add all the values:  $120 + 210 + 180 = 510$

Divide the total by the number of values (in this case, 3):

$$\begin{array}{r} 170 \\ 3 \overline{)510} \\ \underline{3} \phantom{0} \\ 21 \phantom{0} \\ \underline{21} \phantom{0} \\ 0 \phantom{0} \\ \underline{0} \\ 0 \phantom{0} \\ \underline{0} \end{array}$$

- 14. (4)** You want to know how many 45-cupcake groups are required to make 350 cupcakes, so divide 45 into 350:

$$\begin{array}{r} 7 \\ 45 \overline{)350} \\ \underline{315} \\ 35 \end{array}$$

You know that it will take more than 7 hours but fewer than 8 hours (because only 35 is left over).

- 15. (4)** If you save 25%, then you pay 75%. This means that you need to find 75% of \$140. (The symbol “%” means *out of 100*, and “of” means *multiply*.)

$$75\% \text{ of } \$140 = .75 \times \$140 = \$105.00$$

- 16. (5)**

$$5 \text{ apples: } 5 \times .60 = \$3.00$$

$$10 \text{ bananas: } 10 \times .20 = \$2.00$$

$$4 \text{ cantaloupes: } 2 \times 1.00 = \$2.00 \text{ (4 = } 2 \times 2 \text{ for \$1)}$$

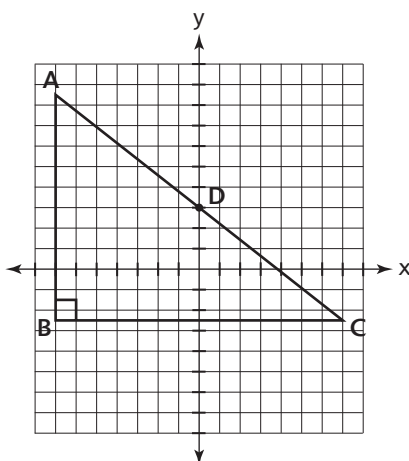
$$5 \text{ oranges: } \$1.00 + 2 \times .39 = \$1.78 \text{ (3 for \$1 and 39¢ each for the other 2)}$$

To find the total, add

$$\$3.00 + \$2.00 + \$2.00 + \$1.78 = \$8.78$$



17.



Notice that sides BC are the longest sides and that they intersect the y-axis at the coordinates (0,3).

- 18. (3)** You need to find 12% of \$48. (The symbol “%” means *out of 100*, and “of” means *multiply*.)

$$12\% \text{ of } \$48 = .12 \times \$48 = \$5.76 = \$6.00 \text{ raise (to the nearest dollar)}$$

Now add her raise to her wage:

$$\$48 + \$6 = \$54$$

- 19. (1)** To find the volume of a container that stands up straight with its sides perpendicular to its base

First, find the area (A) of its base (a circle):

$$\pi \text{ times (radius)}^2 \quad [A = \pi r^2]$$

Then, multiply this number by the container’s height. So,

$$\begin{aligned} \text{Volume} &= \pi \times (\text{radius})^2 \times \text{height} = 3.14(10)^2(12) \\ &= 3.14(100)(12), \text{ or approximately } 3(100)(12) = 3,600 \end{aligned}$$

Reminder: The term *radius* refers to the distance from the center of the circle to the circle’s edge (halfway across), and the formula for finding the area (A) of a circle is

$$A = \pi r^2$$

Pi, or  $\pi$ , is approximately 3.14.

- 20. (3)** Add  $30\% + 34\% = 64\%$  spent on rent, food, tuition, and books. The entire graph equals 100%, so  $100\% - 64\% = 36\%$  remaining.

You can also find the answer by noticing that after tuition, books, rent, and food are taken away, only two wedges of the graph are left. You can add the amounts in these two wedges to get the answer:

$$24\% + 12\% = 36\%$$



- 21. \$6,000** Because the student spent \$6,800 on tuition and books, which, according to the graph, is 34%, you can figure out his total budget in dollars. Set up the equation as follows:

$$34\% \text{ of } x = \$6800$$

$$\text{Change to } .34x = \$6800$$

Now divide by .34:

$$\frac{.34x}{.34} = \frac{6800}{.34}$$

$$\text{So } x = \$20,000$$

Because rent and food are 30%

$$30\% \text{ of } \$20,000 = .30 \times \$20,000 = \$6,000$$

**22. 56**

$$RP = PQ = 14 \text{ cm.}$$

$$RP + PQ = 14 + 14 = 28 \text{ cm.}$$

RQ is the radius of the large circle, so the diameter must be 56.

Reminder: The radius of a circle is the distance from the center of the circle to the circle's edge (halfway across), whereas the diameter is the distance all the way across the circle through its center.

- 23. (5)** *Triple* means *three times*. So,

$$m = \text{males}$$

$$3m = \text{females}$$

Altogether she had 48 puppies:

$$m = \frac{48}{4}$$

So, if Abbey had 12 males, she must have had 36 females:

$$48 - 12 = 36$$

- 24. (4)** Roy's roof has *15 hundred* (1,500) square feet:

$$1500 \div 100 = 15$$

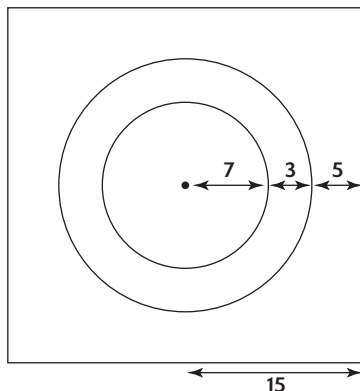
For each 100 feet, Roy needs 3 bundles. So, he will need:

$$15 \times 3 = 45 \text{ bundles}$$

Because each bundle weighs 50 pounds, the total weight of the shingles will be:

$$45 \times 50 = 2,250 \text{ pounds}$$

- 25. (2)** If the dimensions of the square are 30 feet by 30 feet, the distance to a side from the center is 15 feet. And, if the walkway is 5 feet from the fence, and it is 3 feet across, 8 feet of the radius are already spoken for. So,  $15 - 8 = 7$  feet remaining for the radius of the pool.



- 26. (3)** Since angle R and angle T have equal measures ( $40^\circ$ ), the sides opposite them have equal measures. So,  $RS = 5$  yards. (An isosceles triangle has two equal sides.) To find the perimeter (the distance around the triangle), add the three sides:

$$8 \text{ yards} + 5 \text{ yards} + 5 \text{ yards} = 18 \text{ yards}$$

- 27. (1)** You want to find how many groups of 16 it takes to make 400, so divide 16 into 400.

$$\begin{array}{r} 25 \\ 16 \overline{)400} \\ \underline{32} \phantom{0} \\ 80 \\ \underline{80} \\ 0 \end{array}$$

It will take Alice approximately 25 days to do 400 invitations. If she starts on January 1, she should be finished by about January 25.

- 28. (4)** To find Jennifer's total sales, you could add together all the pounds she sold:

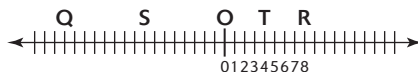
$$3 + 5 + 4 + 6 + 8 = 26 \text{ pounds}$$

Then, multiply the 26 pounds by the price for each pound:

$$26(7.35)$$

Remember that  $26(7.35)$  is the same as  $26 \times 7.35$ .

- 29. (1)**



0 is the origin of the number line, with positive numbers to the right and negative numbers to the left. The right answer is R because it is 8 units to the right of 0.

- 30. (3)** You need to find how many  $1\frac{1}{4}$ s are in  $17\frac{1}{2}$ , so divide

$$17\frac{1}{2} \div 1\frac{1}{4} = \frac{35}{2} \div \frac{5}{4} = \frac{35}{2} \times \frac{4}{5} = 14$$

Or in decimals:

$$1\frac{1}{4} = 1.25 \text{ and } 17\frac{1}{2} = 17.5$$

$$\begin{array}{r} 14. \\ 1.25 \overline{)17.50} \\ \underline{125} \phantom{0} \\ 500 \\ \underline{500} \\ 0 \end{array}$$

- 31. 15** Numeration problems make up 10% of the test, and algebra problems make up 30%. This means that there should be three times as many algebra problems as numeration problems. So, if there are 5 numeration problems, there should be 15 algebra problems.

$$5 \times 3 = 15$$

- 32. (5)** To answer this question, you would need to know the height of the taller glass so that you could set up a proportion. Because the height of the taller glass is not given, this problem cannot be solved.

- 33. (2)** At the time she stopped mowing, Jean had mowed 15 out of the 45 minutes necessary to complete the job:

$$\frac{15}{45} = \frac{1}{3}$$

Reminder: There are 60 minutes in one hour, 30 minutes in a half hour, and 15 minutes in a quarter hour.

- 34. (4)** Because 59% of the people go to the movies and 39% play sports, simply subtract:

$$59\% - 39\% = 20\%$$

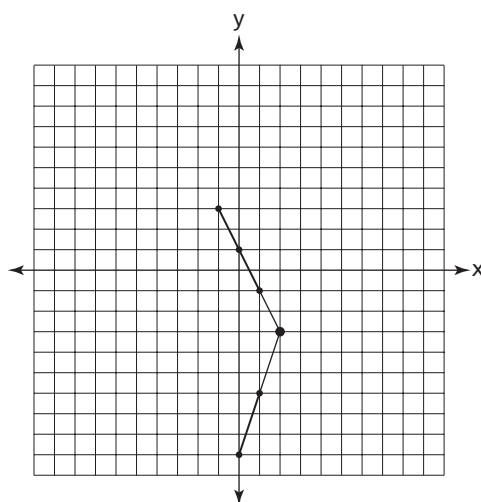
- 35. (4)** Amusement parks, gardening, movies, and exercise programs are each engaged in at least once a year by MORE than 48% of the people.

- 36. (2)** The square root of a number is a number which, when multiplied by itself, produces the number. For example, the square root of 9 is 3 because  $3 \times 3 = 9$ .

$$4 \times 4 = 16 \text{ and } 5 \times 5 = 25$$

So, the square root of 22 must be between 4 and 5 because 22 is between 16 and 25.

37.



If you simply extend both lines, they will intersect at the point  $(2, -3)$ . Notice that the slope of the first line is  $-2/1$  — that is, for every one move to the right, the line goes down two. In the second line, the slope is  $3/1$  — that is, for every one move to the right, the line goes up three.

**38. (5)** *Quadruple* means to *multiply by 4*. Equation (5) describes this:

Four times the number of silver dollars is \$388:

$$4d = 388$$

**39. (3)** If Frita weighs 9 pounds, Duke must weigh  $9 + 3 = 12$  pounds. If Duke weighs 12 pounds, Emily must weigh  $12 - 4 = 8$  pounds.

**40. (4)**

$$10^0 = 1$$

$$10^3 = 1000$$

$$10^1 = 10$$

$$10^4 = 10,000$$

$$10^2 = 100$$

$$10^5 = 100,000$$

$$4 \times 10^5 = 4 \times 100,000 = 400,000 = \text{Roberto's culture}$$

$$8 \times 10^4 = 8 \times 10,000 = 80,000 = \text{Linda's culture}$$

$$80,000 \times 5 = 400,000$$

So, Roberto's culture (400,000) is 5 times larger than Linda's (80,000).

**41. (1)** Dolores has  $100 + 4 = 104$  feet of materials. Therefore, the perimeter of her garden will be 104 feet. (Remember that *perimeter* means *distance around*.) Dolores will have two sections that are 15 feet:

$$2 \times 15 = 30$$

This leaves  $104 - 30 = 74$  feet remaining for the other sides. So,  $74 \div 2 = 37$  feet for each side.

To check

$$15 + 15 + 37 + 37 = 104$$

- 42. (2)** If you let

$E$  = Erika's licorice

Then  $E + 8$  = Tim's licorice (Tim got 8 more inches of licorice than Erika did.)

And Erika's licorice + Tim's licorice = 36

So,  $E + (E + 8) = 36$

$$\begin{array}{r} 2E + 8 = 36 \\ -8 \quad -8 \\ \hline 2E = 28 \\ E = 14 \end{array}$$

Or

If they split the licorice rope evenly, they each would receive 18 inches. A difference of 8 inches is split, and half is added to Tim's half and half is subtracted from Erika's.

Erika	Tim
18	18 → total of 36 inches
<u>- 4</u>	<u>+ 4</u> → total of 8 inches difference
14	22 → total of 36 inches

- 43. 120** Because angles A and B form a straight line, their sum must equal  $180^\circ$ . So,

$$A + B = 180^\circ$$

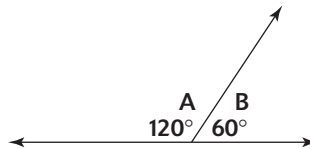
And because A is twice B

$$2B + B = 180^\circ$$

$$3B = 180^\circ$$

$$B = \frac{180}{3}$$

$$B = 60^\circ$$



Because  $A + B = 180^\circ$ , and  $B = 60^\circ$ , A must equal  $120^\circ$ .

- 44. (2)** Slim buys a salad + beverage:

$$\$1.00 + \$0.50 = \$1.50$$

So, he has left:

$$\$3.05 - \$1.50 = \$1.55$$

The only combination that Slim can buy is the one in choice (2):

$$\text{Soup} + \text{dessert} = \$0.75 + \$0.80 + \$1.55$$

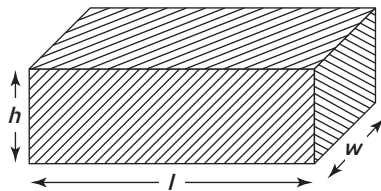
Each of the other answer choices would cost more than the \$1.55 that Slim has remaining.

- 45. (3)** To find the surface area, you must find the area of each of the faces, and then add them all together. Because each face is a rectangle, to find the area of each face, simply multiply its two dimensions:

$$\text{top face} = l \times w$$

$$\text{right face} = w \times h$$

$$\text{front face} = l \times h$$



There is a bottom face to match the top face.

There is a left face to match the right face.

There is a back face to match the front face.

So, you need

$$2(l \times w) + 2(w \times h) + 2(l \times h) = 2(lw) + 2(wh) + 2(lh)$$

- 46. (5)** To find the complete solution, you must set each term equal to zero.

$$x = 0$$

$$(x + 3) = 0$$

$$(x - 2) = 0$$

Now solve each one:

$$\begin{array}{r} x + 3 = 0 \\ -3 \quad -3 \\ \hline x = -3 \end{array}$$

$$\begin{array}{r} x - 2 = 0 \\ +2 \quad +2 \\ \hline x = 2 \end{array}$$

So, 0, -3, and 2 is the complete solution.

- 47. (4)** The sum of the three interior angles of any triangle is  $180^\circ$ . So, if one angle is  $60^\circ$ , that leaves

$$180^\circ - 60^\circ = 120^\circ$$

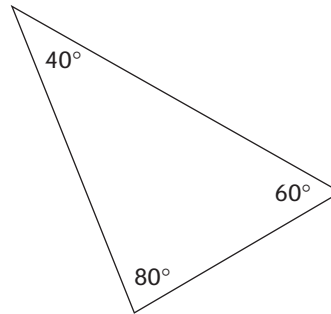
Because one angle is twice the other

$$\text{angle} + 2(\text{angle}) = 120^\circ$$

$$\frac{3(\text{angle})}{3} = \frac{120^\circ}{3}$$

$$\text{angle} = 40^\circ$$

$$2(\text{angle}) = 80^\circ$$



Or you could have worked from the answers.  $60^\circ$  plus which answer is  $180^\circ$ ?

- 48. (4)** Find 20% of \$12,000:

$$.20(\$12,000)$$

Then, subtract this discount from the original price:

$$\$12,000 - .20(\$12,000)$$

- 49. (2)** There are 36 yellow gumballs out of a total of 78 gumballs, so the chance of getting a yellow gumball is 36 out of 78 or  $\frac{36}{78}$ .

- 50. (4)** To solve this, you need to find the hypotenuse (the footbridge) of the right triangle by using the Pythagorean theorem:

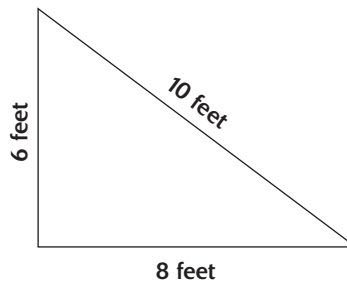
$$a^2 + b^2 = c^2$$

$$6^2 + 8^2 = c^2$$

$$36 + 64 = c^2$$

$$100 = c^2$$

$$10 = c$$







# Practice Test 2

## Language Arts, Writing (75 mins., 50 ques.)

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### PART I

Do not rest the point of your pencil on the answer sheet while you are considering your answer. Make no stray or unnecessary marks. If you change an answer, erase your first mark completely. Mark only one answer space for each question; multiple answers will be scored as incorrect. Do not fold or crease your answer sheet. All test materials must be returned to the test administrator.

*Directions:* Choose the one best answer to each question.

Questions 1 through 12 refer to the following information about mutual funds.

### Choosing a Mutual Fund

(A)

(1) Mutual funds have become an increasingly popular investment. (2) With five hundred to one thousand dollars to invest, you can choose from a broad range of investment possibilities. (3) For example, you could invest in precious metals, tax-free bonds, mortgage securities, or over-the-counter stocks.

(B)

(4) The interest rate you receive depends on how much that funds securities are earning. (5) Some funds specialize in only one kind of security or industry, most offer a variety and, therefore, a means to minimize your risk. (6) If your fund is sold by an investment group that offers several types of funds, one can usually move money from one fund to another to take advantage of changes in market conditions.

(C)

(7) One popular type of fund is the money market mutual fund. (8) It may invest in a variety of securities or in only one type, such as treasury bills. (9) Like with a money market deposit account, you can withdraw your money without penalty at any time. (10) You can also write checks, usually for a minimum amount, such as \$250. (11) But one shall keep in mind that your money may not be protected by federal insurance in this type of fund.

(D)

(12) Since mutual funds are required by law to declare its investment policies, you can use these statements to select funds that match your investment goals. (13) You can buy mutual funds either through brokers or mutual fund corporations directly.

1. Sentence 1: **Mutual funds have become an increasing popular investment.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) an increasing popular
  - (2) a increasing popular
  - (3) increasing and popular
  - (4) an increasingly and popular
  - (5) an increasingly popular
2. Sentence 2: **With five hundred to one thousand dollars to invest, you can choose from a broad range of investment possibilities.**

Which correction should be made to sentence 2?

- (1) change to invest to for investing
  - (2) remove the comma after invest
  - (3) change choose to chose
  - (4) change possibilities to possibility
  - (5) no correction is necessary
3. Sentences 2 and 3: **With five hundred to one thousand dollars to invest, you can choose from a broad range of investment possibilities. For example, you could invest in precious metals, tax-free bonds, mortgage securities, or over-the-counter stocks.**

The most effective combination of sentences 2 and 3 would include which of the following groups of words?

- (1) possibilities, for example you could
  - (2) possibilities; for example, you could
  - (3) possibilities, including, for example,
  - (4) possibilities; and these include, for example,
  - (5) possibilities, and these would include
4. Sentence 4: **The interest rate you receive depends on how much that funds securities are earning.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) that funds securities are
  - (2) that funds securities is
  - (3) that funds' securities are
  - (4) that fund's securities are
  - (5) that fund's securities is
5. Sentence 5: **Some funds specialize in only one kind of security or industry, most offer a variety and, therefore, a means to minimize your risk.**

Which correction should be made to sentence 5?

- (1) move only to follow specialize
- (2) insert a comma after security
- (3) remove the comma after industry
- (4) insert a but before most
- (5) change variety and to variety but

6. Sentence 6: **If your fund is sold by an investment group that offers several types of funds, one can usually move money from one fund to another to take advantage of changes in market conditions.**

Which correction should be made to sentence 6?

- (1) change is sold to has been sold
- (2) change offers to offer
- (3) replace the comma after funds with a semicolon
- (4) change the first one to you
- (5) no correction is necessary

7. Sentences 7 and 8: **One popular type of fund is the money market mutual fund. It may invest in a variety of securities or in only one type, such as treasury bills.**

The most effective combination of sentences 7 and 8 would include which of the following groups of words?

- (1) One of the popular types of fund is the
- (2) A type of fund that is popular is the
- (3) A popular fund is the
- (4) One popular type of fund, the money market mutual fund
- (5) One popular type, which is the money market mutual fund

8. Sentence 9: **Like with a money market deposit account, you can withdraw your money without penalty at any time.**

Which correction should be made to sentence 9?

- (1) change Like to As
- (2) change you to one
- (3) change your to one's
- (4) insert any after without
- (5) change time to times

9. Sentence 10: **You can also write checks, usually for a minimum amount, such as \$250.**

Which correction should be made to sentence 10?

- (1) change can to could
- (2) remove the comma after checks
- (3) change minimum to minimal
- (4) change amount to amounts
- (5) no correction is necessary

10. Sentence 11: **But one shall keep in mind that your money may not be protected by federal insurance in this type of fund.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) But one shall keep in mind
- (2) But, one shall keep in mind
- (3) But, one should keep in mind
- (4) But you should keep in mind
- (5) But you shall keep in mind

GO ON TO THE NEXT PAGE

- 11. Sentence 12: Since mutual funds are required by law to declare its investment policies, you can use these statements to select funds that match your investment goals.**

Which correction should be made to sentence 12?

- (1) replace its with their
- (2) replace the comma after policies with a semicolon
- (3) remove the comma after policies
- (4) replace match with matches
- (5) replace your with you're

- 12. Sentence 13: You can buy mutual funds either through brokers or mutual fund corporations directly.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) either through brokers or mutual fund corporations
- (2) either through brokers or you can buy through mutual fund corporations
- (3) through either brokers or through mutual fund corporations
- (4) either through broker or mutual fund corporation
- (5) through either brokers or mutual fund corporations

Questions 13 through 19 refer to the following newspaper notice to city residents.

**Public Works Department  
City of Fairville**

**Public Notice  
Concerning: Refuse Pickup and Recycling**

(A)

(1) The city of Fairville, has established new schedules for refuse pickup beginning May 1. (2) The southeast quadrant of the city will have pickup on Monday and Thursday. (3) The northeast quadrant's pickup will be on Tuesday and Friday. (4) Refuse in the southwest will be collected Monday and Friday, in the northwest Wednesday and Saturday. (5) Residents should have their cans at the curb by 6:00 a.m. on the day of pickup.

(B)

(6) The city always striving to remain on schedule, but events out of our control may sometimes occur. (7) In snow emergencies or other emergency situations, please tune to your local radio and TV stations for revised pickup dates in your area. (8) In areas outside the city limits, pickup will be on Monday and Thursday.

(C)

(9) Last month, the city has contracted with a new recycling firm. (10) The recycler has changed some of the requirements for handling, separating, and bagging the items to be

recycled. (11) As before, all items should be washed. (12) All items should be in a container separate from the regular trash, marked “recycle.” (13) Aluminum cans should be in red bags, glass items in green bags, authorized plastic items (see previous notices for allowable plastic items) in brown bags.

(D)

(14) The city urges the citizens of Fairville to make note of these changes. (15) Make note of them so there will be no disruption in their refuse collection. (16) Questions or concerns may be addressed to the Public Works Department.

- 13. Sentence 1: The city of Fairville, has established new schedules for refuse pickup beginning May 1.**

Which correction should be made to sentence 1?

- (1) insert a comma after city
- (2) remove the comma after Fairville
- (3) insert a comma after schedules
- (4) change May to may
- (5) no correction is necessary

- 14. Sentence 4: Refuse in the southwest will be collected Monday and Friday, in the northwest Wednesday and Saturday.**

If you rewrote sentence 4 beginning with

On Monday and Friday,

The next word should be

- (1) southwest
- (2) collected
- (3) refuse
- (4) northwest
- (5) will

- 15. Sentence 6: The city always striving to remain on schedule, but events out of our control may sometimes occur.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) striving
- (2) have strived
- (3) are striving
- (4) striven
- (5) strives

- 16. Sentence 8: In areas outside the city limits, pickup will be on Monday and Thursday.**

Which revision should be made to the placement of sentence 8?

- (1) move sentence 8 to follow sentence 4
- (2) move sentence 8 to follow sentence 5
- (3) move sentence 8 to the beginning of paragraph B
- (4) move sentence 8 to the beginning of paragraph C
- (5) remove sentence 8

GO ON TO THE NEXT PAGE

- 17. Sentence 9: Last month, the city has contracted with a new recycling firm.**

Which correction should be made to sentence 9?

- (1) remove the comma after month
- (2) change city to City
- (3) change has contracted to have contracted
- (4) change has contracted to contracted
- (5) insert a comma after contracted

- 18. Sentence 12: All items should be in a container separate from the regular trash, marked “recycle.”**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) container separate from the regular trash, marked “recycle.”
- (2) separate container marked “recycle.”
- (3) recycle container separate from the regular trash.
- (4) regular trash container marked “recycle.”
- (5) separate container.

- 19. Sentences 14 and 15: The city urges the citizens of Fairville to make note of these changes. Make note of them so there will be no disruption in their refuse collection.**

The most effective combination of sentences 14 and 15 would include which of the following groups of words?

- (1) Although the city
- (2) Because the city
- (3) changes so
- (4) changes which will
- (5) changes, make

Questions 20 through 25 refer to the following advice.

### How to Identify Birds

(A)

(1) Here are some guidelines for identifying a bird you're unfamiliar with. (2) Make quick notes, either mental or physical, about the following characteristics. (3) The bird will rarely sit still long enough for you to find it in your bird book.

(B)

**Size.** (4) A bird's general size is a clue to its type. (5) Obviously, you wouldn't confuse an eagle with a sparrow for this reason. (6) If a bird is far away, you may not be able to accurately judge how many inches long it is on its own, you can compare it to other birds you already know or to an inanimate object near the bird, an object you can measure after the bird has flown away.

(C)

**Shape.** (7) Birds may have distinctive shapes. (8) For example, the tufted titmouse is so named because of the "tufted" crest on its head. (9) Swallows have identifiable tail feathers. (10) The great blue heron has long legs, which it carries straight behind it as it flies.

(D)

**Color and Pattern.** (11) The bright red of the cardinal, the blue and white of the bluejay, and the yellow and black of the goldfinch are obvious examples of color. (12) The shape of the red on a woodpecker's head is an example of pattern. (13) But even in the more subdued feathers of many species, there is always coloration and pattern specific to that bird.

(E)

**Behavior and Voice.** (14) Does the bird you're watching move upside down on a tree trunk? (15) Then maybe it's a nuthatch. (16) Does it feed only on the ground? (17) Perhaps it's a mourning dove. (18) Is its voice, or song, to be easily recognized or unusual, like the chickadee's "chick-a-dee"? (19) Making note of all these things will help you identify the bird when you page through your bird manual. (20) It will also save you a lot of time because you'll be able to go directly to the right section in the book.

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- 20.** Sentences 2 and 3: **Make quick notes, either mental or physical, about the following characteristics. The bird will rarely sit still long enough for you to find it in your bird book.**

The most effective combination of sentences 2 and 3 would begin with which of the following groups of words?

- (1) In physical notes, the bird
- (2) Characteristics that are mental or physical
- (3) Although the bird will rarely
- (4) Characteristics, in quick notes
- (5) Because the bird will rarely

- 21.** Sentence 6: **If a bird is far away, you may not be able to accurately judge how many inches long it is on its own, you can compare it to other birds you already know or to an inanimate object near the bird, an object you can measure after the bird has flown away.**

Which correction should be made to sentence 6?

- (1) replace is far away with was far away
- (2) replace accurately with accurate
- (3) change own, you to own, but you
- (4) remove the comma after own
- (5) remove the comma after near the bird

- 22.** Sentence 13: **But even in the more subdued feathers of many species, there is always coloration and pattern specific to that bird.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) species, there is
- (2) species, being
- (3) species, identifying
- (4) species, there are
- (5) species and

- 23.** Sentence 14: **Does the bird you're watching move upside down on a tree trunk?**

Which correction should be made to sentence 14?

- (1) change Does to Will
- (2) change Does to Do
- (3) change you're to your
- (4) insert a comma after watching
- (5) no correction is necessary

- 24.** Sentence 18: **Is its voice, or song, to be easily recognized or unusual, like the chickadee's "chick-a-dee"?**

Which correction should be made to sentence 18?

- (1) change its to it's
- (2) remove the comma after voice
- (3) remove to be
- (4) change or unusual to and unusual
- (5) change chickadee's to chickadees



25. Which revision would improve the effectiveness of the document?

Begin a new paragraph with

- (1) sentence 6
- (2) sentence 9
- (3) sentence 13
- (4) sentence 19
- (5) sentence 20

Questions 26 through 37 refer to the following explanation of Social Security benefits.

(A)

- (1) You must be sixty-two years old to qualify for the Social Security retirement benefits you have earned, but most workers do not begin to receive they're benefits until they are sixty-five. (2) If you retire earlier and elect to collect Social Security at sixty-two, your benefits will be lesser.

(B)

- (3) Usually, a person must have worked for ten years to qualify for benefits. (4) The Social Security office can provide an estimate of the amount you received if you are approaching retirement age. (5) This estimate will not include whatever additional contributions you will make between the time your estimate is figured and the time of your retirement.

(C)

- (6) If you have an income from investments retirement funds, or any sources other than a paying job or self-employment your Social Security benefits will not be affected. (7) It may, however, be subject to income taxes, at least in part. (8) If your gross income exceed a certain amount, a portion of your Social Security payment will be taxed. (9) And if you return to work after you've begun to receive benefits, you will loose one dollar in benefits for every two dollars you earn above a certain amount. (10) An amount generally changing every year or two based on the rate of inflation. (11) When you're young, you should begin to put aside money to supplement your Social Security benefits. (12) If your over seventy, you can earn as much as you like without any reduction in Social Security benefits.

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- 26.** Sentence 1: **You must be sixty-two years old to qualify for the Social Security retirement benefits you have earned, but most workers do not begin to receive they're benefits until they are sixty-five.**

Which correction should be made to sentence 1?

- (1) change have earned to will have earned
- (2) remove the comma after earned
- (3) change workers to worker's
- (4) change they're to their
- (5) change they are to their

- 27.** Sentence 2: **If you retire earlier and elect to collect Social Security at sixty-two, your benefits will be lesser.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) sixty-two, your benefits will be lesser.
- (2) sixty-two, then your benefits will be lesser.
- (3) sixty-two your benefits are less.
- (4) sixty-two your benefits will be less.
- (5) sixty-two, your benefits will be smaller.

- 28.** Sentence 3: **Usually, a person must have worked for ten years to qualify for benefits.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) Usually, a person must have worked
- (2) Usually, a person must be working
- (3) Usually, you must have worked
- (4) Usually, you must work
- (5) Usually, you work

- 29.** Sentence 4: **The Social Security office can provide an estimate of the amount you received if you are approaching retirement age.**

Which correction should be made to sentence 4?

- (1) change can provide to provide
- (2) change received to receive
- (3) change received to will receive
- (4) change are approaching to approach
- (5) no correction is necessary

- 30. Sentence 5: This estimate will not include whatever additional contributions you will make between the time your estimate is figured and the time of your retirement.**

Which correction should be made to sentence 5?

- (1) change will not include to do not include
- (2) change you will make to you are making
- (3) change is figured to was being figured
- (4) change your retirement to you retiring
- (5) no correction is necessary

- 31. Sentence 6: If you have an income from investments retirement funds, or any sources other than a paying job or self-employment your Social Security benefits will not be affected.**

Which correction should be made to sentence 6?

- (1) insert commas after investments and self-employment
- (2) remove the comma after funds
- (3) insert a semicolon after self-employment
- (4) change the period to a question mark
- (5) change will not be to were

- 32. Sentence 7: It may, however, be subject to income taxes, at least in part.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) It may, however, be
- (2) However, it may be
- (3) It may be however,
- (4) They may, however, be
- (5) However they may be

- 33. Sentence 8: If your gross income exceed a certain amount, a portion of your Social Security payment will be taxed.**

Which correction should be made to sentence 8?

- (1) change your to one's
- (2) change exceed to exceeds
- (3) omit the comma after amount
- (4) change will be to is
- (5) no correction is necessary

- 34.** Sentence 9: **And if you return to work after you've begun to receive benefits, you will loose one dollar in benefits for every two dollars you earn above a certain amount.**

Which correction should be made to sentence 9?

- (1) remove the And
- (2) change you've to you
- (3) change loose to lose
- (4) change every to each
- (5) no correction is necessary

- 35.** Sentences 9 and 10: **And if you return to work after you've begun to receive benefits, you will loose one dollar in benefits for every two dollars you earn above a certain amount. An amount generally changing every year or two based on the rate of inflation.**

Which of the following is the best way to write the underlined portion of these sentences? If the original is the best way, choose option (1).

- (1) a certain amount. An amount generally changing
- (2) a certain amount, which generally changes
- (3) an amount, certainly changing
- (4) an amount, which will almost certainly change
- (5) a certain amount; an amount changing in general

- 36.** Sentence 11: **When you're young, you should begin to put aside money to supplement your Social Security benefits.**

Which revision should be made to the placement of sentence 11?

- (1) move sentence 11 to follow sentence 6
- (2) move sentence 11 to follow sentence 7
- (3) move sentence 11 to follow sentence 8
- (4) remove sentence 11
- (5) move sentence 11 to the end of paragraph C

- 37.** Sentence 12: **If your over seventy, you can earn as much as you like without any reduction in Social Security benefits.**

Which correction should be made to sentence 12?

- (1) change your to a person is
- (2) change your to you're
- (3) insert money after as much
- (4) change like to pleased
- (5) change without any to without many

Questions 38 through 44 refer to the following letter, which attempts to solicit new magazine subscribers.

**Your Finances**  
*The Financial Magazine for the Rest of Us*

Ms. Dolores Lopez  
566 Marvin Lane  
Lincoln, Nebraska 68528

Dear Ms. Lopez:

(A)

(1) Do you need financial help? (2) Are you tired of paging through magazines that promise to help you plan for your financial future, for example and finding that they're directed toward people who have more money to invest than you think you'll ever have? (3) Will you about to give up on trying to wade through investment articles filled with muddy technical jargon that only a financial broker would understand? (4) Do you need help in starting a personal investment plan but don't know where to get it? (5) Please take a moment to read this letter to see what we offer. (6) Then *Your Finances* is the magazine for you.

(B)

(7) *Your Finances* is for people with low to moderate incomes. (8) The magazine is not for the already wealthy. (9) Yes, you too can have a comfortable financial future — and it doesn't take an investment of thousands of dollars a month to achieve that goal. (10) It just takes planning and information.

(C)

(11) *Your Finances* includes articles on topics important to you. (12) Since, you first need the money to invest, we tell you how to save in little ways that add up to big amounts. (13) We investigate the best ways to get the most you can for the work you do, starting your own business without leaving your regular job, and much more. (14) Because we help you deal with workplace savings and investment plans, choose among savings accounts, CDs, stocks, and bonds, and get the best interest available while keeping your money safe.

(D)

(15) What have you got to lose? (16) The first issue is free. (17) If you don't like it, keep the magazine, write "cancel" on the Bill, and send it back to us. (18) Just fill in the subscription coupon enclosed, and your first issue will be on its way to you. (19) We're sure you'll be glad you gave us a try.

*Carmelo Nash*

Carmelo Nash  
Subscription Manager

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- 38.** Sentence 2: **Are you tired of paging through magazines that promise to help you plan for your financial future, for example and finding that they're directed toward people who have more money to invest than you think you'll ever have?**

Which correction should be made to sentence 2?

- (1) insert a comma after magazines
- (2) replace your with you're
- (3) insert a comma after example
- (4) change than to then
- (5) no correction is necessary

- 39.** Sentence 3: **Will you about to give up on trying to wade through investment articles filled with muddy technical jargon that only a financial broker would understand?**

Which correction should be made to sentence 3?

- (1) replace Will you with Would you
- (2) replace Will you with Are you
- (3) replace you about with you be about
- (4) change about to to about
- (5) no correction is necessary

- 40.** Sentence 6: **Then *Your Finances* is the magazine for you.**

Which revision should be made to the placement of sentence 6?

- (1) move sentence 6 to the beginning of paragraph A
- (2) move sentence 6 to follow sentence 1

- (3) move sentence 6 to follow sentence 2
- (4) move sentence 6 to follow sentence 3
- (5) move sentence 6 to follow sentence 4

- 41.** Sentences 7 and 8: ***Your Finances* is for people with low to moderate incomes. The magazine is not for the already wealthy.**

Which of the following is the best way to write the underlined portion of these sentences? If the original is the best way, choose option (1).

- (1) with low to moderate incomes. The magazine is not
- (2) with low to moderate incomes, the magazine is not
- (3) low to moderate incomes, not
- (4) with low to moderate incomes, not
- (5) having had low to moderate incomes; the magazine is not

- 42.** Sentence 12: **Since, you first need the money to invest, we tell you how to save in little ways that add up to big amounts.**

Which correction should be made to sentence 12?

- (1) remove the comma after since
- (2) change need to needs
- (3) remove the comma after invest
- (4) change tell to told
- (5) change how to save to how saving

- 43.** Sentence 14: **Because we help you deal with workplace savings and investment plans, choose among savings accounts, CDs, stocks, and bonds, and get the best interest available while keeping your money safe.**

The most effective revision of sentence 14 would begin with which of the following groups of words?

- (1) We help you deal with
- (2) We help you with dealing
- (3) Getting the best
- (4) Helping you get the best
- (5) Helping, choosing, and getting the best

- 44.** Sentence 17: **If you don't like it, keep the magazine, write "cancel" on the Bill, and send it back to us.**

Which correction should be made to sentence 17?

- (1) change it to them
- (2) remove the comma after it
- (3) change the Bill to the bill
- (4) change the Bill to a bill
- (5) change send to sending

Questions 45 through 50 refer to the following instructions to participants in a gardening competition.

**State Fair Entries Committee  
Rules for Entries  
Flowers, Vegetables, and Fruits  
(A)**

**Entry dates and forms:** (1) Entry forms, which may be obtained from the State Fair Park business office from 9:00 a.m. to 5:00 p.m. Monday through Friday from now until the entry closing date. (2) Forms are also available from selected businesses in your area. (3) Please see the attachment for names and locations of these businesses. (4) Opening date, for submission of entry blanks is July 15. (5) Closing date is August 13. (6) The fair will be open August 16 through August 29.

**(B)**

**Classifications:** (7) Classifications for flowers include the following: cut single, rooted, and arrangements. (8) Vegetables may be classed as leafy, cruciferous, root, legume, or tomato. (9) Tomatoes are included as a vegetable for the purposes of this competition. (10) Rather than a fruit. (11) The classifications for fruit includes berries, apples, peaches (including nectarines), citrus fruit, and an open class called "other" (any fruit not specifically mentioned as a separate class).

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(C)

**Regulations:** (12) Bring your entries to the business office during business hours at any time during the hours mentioned above. (13) We recommend, however, that you bring flowers and fruit toward the end of this period although they are so perishable. (14) Entries must be in sturdy containers so that they may be placed in the displays by fair workers. (15) They must also be clearly tagged with your name, address, and phone number.

(D)

**Awards:** (16) Entries in each classification will be awarded first (blue), second (red), and third (white) ribbons. (17) One entry in each of the overall categories of flowers, vegetables, and fruit will be awarded a “best in show” trophy.

**45. Sentence 1: Entry forms, which may be obtained from the State Fair Park business office from 9:00 a.m. to 5:00 p.m. Monday through Friday from now until the entry closing date.**

Which correction should be made to sentence 1?

- (1) remove the comma after forms
- (2) change forms, which to forms
- (3) change obtained to obtain
- (4) change State Fair Park to State fair Park
- (5) change a.m. to in the morning

**46. Sentence 4: Opening date, for submission of entry blanks is July 15.**

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) date, for submission of entry blanks
- (2) date, for submitting of entry blanks
- (3) date, for submission, of entry blanks
- (4) date for submission of entry blanks
- (5) date for submission of entry blanks,

**47. Which revision would improve the effectiveness of paragraph B?**

- (1) remove sentence 7
- (2) move sentence 8 to the end of paragraph B
- (3) move sentence 9 to follow sentence 7
- (4) combine sentences 9 and 10
- (5) no revision is necessary



- 48.** Sentence 11: The classifications for fruit includes berries, apples, peaches (including nectarines), citrus fruit, and an open class called “other” (any fruit not specifically mentioned as a separate class).

Which of the following is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) The classifications for fruit includes
- (2) The classification for fruits include
- (3) The classification for fruits includes
- (4) The classifications for fruit including
- (5) The classifications for fruit include

- 49.** Sentence 13: **We recommend, however, that you bring flowers and fruit toward the end of this period although they are so perishable.**

Which correction should be made to sentence 13?

- (1) remove the comma after recommend
- (2) replace toward with after
- (3) replace although with because
- (4) replace they are with it is
- (5) no correction is necessary

- 50.** Sentence 16: **Entries in each classification will be awarded first (blue), second (red), and third (white) ribbons.**

If you rewrote sentence 16 beginning with

Ribbon awards in each classification,

the next word(s) should be

- (1) will be awarded
- (2) will be
- (3) awarded
- (4) first (blue)
- (5) ribbons will be

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT WORK ON ANY OTHER SECTION IN THE TEST.



## Language Arts, Writing (45 mins.)

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### PART II

Topic A

We often have one special person who made a major impact on our lives.

Identify a person who had a major impact on your life. Write an essay explaining who the person was and how he or she had an impact on your life. Use your personal observations, experience, and knowledge to support your essay



READER 1										READER 2										CHIEF READER										Fill in reader with correct score	
		0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7		
		0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7		
SCORE										SCORE										SCORE										READER	
		1	2	3	4	OFF						1	2	3	4	OFF						1	2	3	4	OFF				1	3

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Frequency	Percentage
Daily	10%
Often	10%
Sometimes	10%
Never	10%

1237373

## Social Studies (70 mins., 50 ques.)

*Directions:* Choose the one best answer to each question.

Question 1 refers to the following information from the Declaration of Independence.

“The history of the present king [George] of Great Britain is a history of repeated injuries and usurpations, all having in direct object the establishment of an absolute tyranny over these states. To prove this, let facts be submitted to a candid world.” — Thomas Jefferson

1. According to the information presented, how did Thomas Jefferson justify the United States declaring its independence from Great Britain?
  - (1) by accusing Parliament of passing unfair laws against the 13 colonies
  - (2) by listing a series of accusations against King George and claiming them to be proven facts
  - (3) by documenting events in which King George had acted unfairly against the colonists
  - (4) by asking other nations to judge whether the colonies were right in rebelling against Great Britain
  - (5) by warning that the future actions of King George would bring absolute tyranny to the colonies

2. Which of the following statements best describes the powers of the President of the United States?
  - (1) The U.S. Constitution specifies in detail the duties of the President in Article II far more than it does the legislative branch in Article I.
  - (2) The great powers of the President derive more from practice, precedent, and custom than they do from the duties described in the Constitution.
  - (3) The powers of the President are subject to control by Congress.
  - (4) The powers of the President are very similar to the powers listed in the Constitution for Congress and the federal judiciary.
  - (5) The powers of the President are restricted by his or her cabinet officers, who either approve or disapprove of the President’s proposals and policies.

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Question 3 refers to the following table.

<b>Married or Not, Women Work</b> <b>Labor Force Participation Rates for Women, in Percentages</b>					
	<b>1960</b>	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>1996</b>
Total	37.7	43.3	51.5	57.5	59.3
Single	58.6	56.8	64.4	66.7	67.1
Married	31.9	40.5	49.9	58.4	61.2
Other <sup>1</sup>	41.6	40.3	43.6	47.2	48.1

<sup>1</sup>Divorced, Widowed, or Separated

Source: U.S. Bureau of Labor Statistics

**3.** According to the chart, which of the following is true?

- (1) Between 1960 and 1996, the percentage of married women in the U.S. labor force almost doubled.
- (2) Between 1960 and 1980, the percentage of single women in the labor force increased at a higher rate than the percentage of married women.
- (3) The number of divorced, widowed, or separated women has increased dramatically since 1960.
- (4) The total percentage of women in the labor force since 1960 has remained about the same.
- (5) The percentage of women in the labor force has grown faster than the percentage of men.

**4.** Spain is separated from France by which of the following natural boundaries?

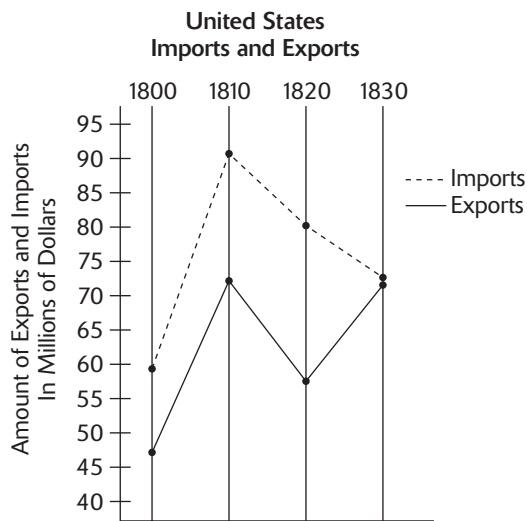
- (1) Bay of Biscay
- (2) Danube River
- (3) Himalaya Mountains
- (4) Iberian Peninsula
- (5) Pyrenees Mountains

**5.** The Age of Enlightenment was a period of history when there were many advances in science, literature, and political philosophy. Which of the following is another name that is often given to the Age of Enlightenment?

The Age of

- (1) Tolerance
- (2) Superstition
- (3) Reason
- (4) Mathematics
- (5) Philosophy

Questions 6 through 9 refer to the following graph.



6. From the graph, which of the following can be concluded?
- (1) Exports and imports increased during each 10-year period.
  - (2) In 1810 exports were approximately twice as great as imports.
  - (3) Exports and imports nearly equaled each other in 1830.
  - (4) The greatest growth in exports was between 1810 and 1820.
  - (5) The amount of exports and imports in 1810 and 1820 nearly equaled each other.
7. In which of the following years did the United States experience the most nearly favorable balance of trade?
- (1) 1830
  - (2) 1825
  - (3) 1820
  - (4) 1810
  - (5) 1800
8. What was the approximate value of the goods imported by the United States in 1820?
- (1) \$93 million
  - (2) \$82 million
  - (3) \$74 million
  - (4) \$60 million
  - (5) \$48 million
9. In 1800, the balance of trade was unfavorable by approximately
- (1) \$12 million
  - (2) \$21 million
  - (3) \$26 million
  - (4) \$47 million
  - (5) \$59 million
10. The chronometer, a type of clock invented in the 18th century, proved invaluable for seafarers in helping to determine
- (1) their location in degrees of longitude as measured from a prime meridian
  - (2) their latitude as measured from the south pole
  - (3) the position of the north star
  - (4) the likelihood of tropical storms
  - (5) dangerous reefs and shoals

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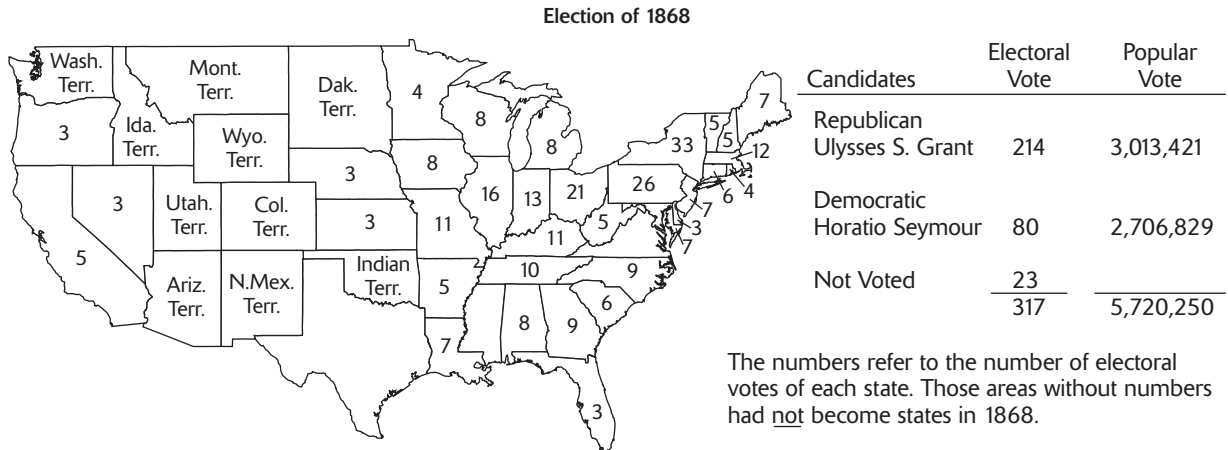
Questions 11 through 13 refer to the following statement.

Every government, at some time or other, falls into wrong measures. They may proceed from mistake or passion. But every such measure does not dissolve the obligation between the governors and the governed. The mistake may be corrected, the passion may pass over. It is the duty of the governed to endeavour to rectify the mistake and appease the passion. They have not at first any other right than to represent their grievances and to pray for redress.

- 11.** According to the statement, what was the responsibility of government to the governed at this time?
- (1) Government expected the governed to obey all rules without complaint.
  - (2) Government had to listen to complaints from the governed about mistakes.
  - (3) Government had to agree to solve the problems when the complaints were pointed out to them.
  - (4) The governed had the right to take whatever action was necessary to solve the problem.
  - (5) The government did not have to do anything about a problem unless the governed pointed it out to them.
- 12.** How did the writer of the statement expect readers to react to the “wrong measures” of government?
- (1) The governed could take up arms against the government if it refused to solve the problem.
  - (2) The governed should turn to religion and pray that God would make the government aware of the problem.
  - (3) It was up to the governed to figure out how to solve the problem, not the government.
  - (4) The governed should explain to the government why a measure was wrong and ask that it be corrected.
  - (5) Government should form committees to make sure that the laws it passed were not wrong ones.
- 13.** From the information given, which of the following must be true?
- (1) mistakes cannot be corrected
  - (2) governors have an obligation to the governed
  - (3) some governments don’t take wrong measures
  - (4) the governed should only pray for redress
  - (5) rectifying the mistake will appease the passion



Questions 14 through 17 refer to the following map.



**14.** According to this map, which of the following had achieved statehood by 1868?

- (1) Utah
- (2) Arkansas
- (3) New Mexico
- (4) Washington
- (5) North Dakota

**15.** Of the five following states, which one had the largest number of electoral votes in 1868?

- (1) California
- (2) Michigan
- (3) New York
- (4) Pennsylvania
- (5) Illinois

**16.** Which of the following statements is supported by the data in the map?

- (1) The South voted solidly Democratic in the election of 1868.
- (2) The potential for future statehood was greater in the southeast than in the southwest.
- (3) Grant received more than twice as many electoral and popular votes as did Seymour.
- (4) More than six million people voted in the election of 1868.
- (5) Not all of the electoral votes were voted in the election of 1868.

**17.** Which of the following states had not achieved statehood by 1868?

- (1) South Dakota
- (2) Oregon
- (3) Nevada
- (4) Illinois
- (5) Missouri

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- 18.** The so-called Northwest Passage was allegedly a way of traveling
- (1) from the Indian Ocean, through the Suez Canal, to the Mediterranean Sea
  - (2) from the Pacific Ocean, through the Bering Strait, to the Arctic Ocean
  - (3) from the Pacific Ocean, through the Arctic Ocean, to the Atlantic Ocean
  - (4) from the Atlantic Ocean to the Pacific Ocean, north of Canada
  - (5) from the Atlantic Ocean, through the Strait of Magellan, to the Pacific Ocean

Questions 19 and 20 refer to the following information.

Water always has been precious in the American West. The scarcity of water in this brown and empty landscape has confined human occupation since the earliest Indian and Spanish settlements. Early nineteenth-century mapmakers described most of the region as the Great American Desert. Modern engineering has attempted to subdue the desert, but it endured and now threatens to cut short western economic progress.

Water use already has passed renewable natural supply in some western states, and the demand for water is accelerating. Irrigated farms, growing cities, and new industries are all competing for available water supplies. Entire states and regions are skirmishing over limited river flows, with economic survival at stake.

- 19.** According to the information, which of the following is most likely to limit western economic development?
- (1) a population shift to the east
  - (2) a demand for water greater than the supply
  - (3) the rising population of coastal areas
  - (4) urban industry
  - (5) environment safeguards that inhibit growth
- 20.** Which of the following is an example of “skirmishing over limited river flows”?
- (1) Arizona has sued California for a larger share of Colorado River water.
  - (2) The cities of Phoenix and Tucson have established areas where desert plants are protected.
  - (3) California has approved a plan to divert water from the Sacramento River delta.
  - (4) The cities of Los Angeles and Riverside are quarreling about smog from Los Angeles, which drifts eastward over the desert.
  - (5) San Diego County has approved a new and very costly flood-control program.

Question 21 refers to the following quotation.

“It seems to me that, if the celestial bodies concur to the generation and attraction of the Earth, they themselves are also of necessity alterable; for otherwise I cannot understand how the application of the Sun and Moon to the Earth to effect production should be any other than to lay a marble statue in the chamber of the bride and from that conjunction to expect children.”

—Galileo, Dialogue on the Great World Systems, 1633.

- 21.** Galileo lived in the 17th century. His sacrilegious view of the universe
- (1) was no surprise to the learned men of the time
  - (2) challenged the beliefs of the Catholic Church
  - (3) enraged readers who thought his writings on sex were too explicit
  - (4) went contrary to the known laws of physics
  - (5) inspired da Vinci and Michelangelo to depict the universe in a new way in their artwork

Questions 22 through 24 refer to the following information.

The federal government is sovereign in certain areas such as the regulation of interstate commerce. State governments control certain other areas, such as regulation of intrastate (within a state) commerce or the police. An intermingling of powers can be seen in some railroad traffic. If a train crosses a state line, it constitutes interstate commerce. Rail shipments originating and ending within a single state constitute intrastate commerce and therefore are regulated by state governments. However, the intrastate and interstate traffic may have moved over the same rails.

- 22.** Which of the following is an example of intrastate commerce?
- (1) an oil shipment transported from New Jersey to Michigan
  - (2) an air shipment of computer chips from California to Oregon
  - (3) a utility company operating solely in New Hampshire
  - (4) a rail shipment from Chicago to St. Louis
  - (5) shipping Florida citrus to other sunbelt states
- 23.** Which of the following is an issue more likely to concern a member of a state legislature than a member of the United States Congress?
- (1) federal income tax exemptions
  - (2) airline routes throughout New England
  - (3) transcontinental interstate highways
  - (4) fishing rights in the Gulf of Mexico
  - (5) the selection of an official state flower

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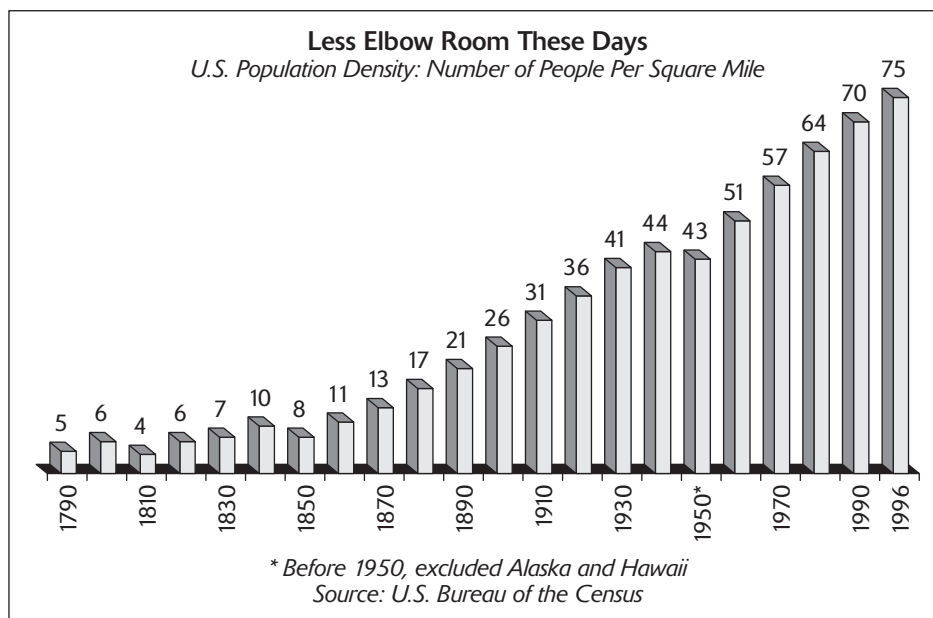
**24.** Over which of the following would the federal rather than the state government have control?

- (1) state wildlife refuges
- (2) colleges and universities
- (3) transcontinental bus routes
- (4) intrastate canals
- (5) city and county jails

**25.** The Russian Revolution began with the overthrow of Czar Nicholas II in March 1917 and ended

- (1) with his return to power in April 1921
- (2) when the Bolshiviks under Lenin won control of the country
- (3) when Germany agreed to an armistice in November 1918
- (4) after Great Britain and the United States gave diplomatic recognition to the new Soviet Union
- (5) when Lenin defeated the Marxist opposition in November 1933

Question 26 refers to the following graph.



- 26.** According to the graph, which of the following is true?
- (1) Population density grew because no new territory was added after 1830.
  - (2) Population grew because people moved from urban to rural regions beginning in the 1890s.
  - (3) There was a change from an agricultural society to an industrial society.
  - (4) U.S. population density has slowly increased since 1960.
  - (5) Immigration has contributed to greater population density.
- 27.** The presidential election in the year 2000 dramatically demonstrated the “winner take all” system in the Electoral College. According to this system, the presidential candidate with the plurality of popular votes in a state wins all of the electoral votes in that state no matter how close the popular vote may be. One important effect of the “winner take all” system is that
- (1) in a close election, third parties may win substantial numbers of electoral votes, as happened in 1992
  - (2) smaller political parties have virtually no chance to win any electoral votes
  - (3) it offers the best choice to all voters, regardless of their party affiliation
  - (4) in a close election, the electoral vote is divided among the parties according to proportioned representation
  - (5) people are encouraged to join smaller political parties to make their wishes known
- 28.** The Populist Revolt of the 1890s, which started the people’s party, was based on the protests of which groups in the United States?
- (1) businessmen in the East and supporters of unlimited coinage of silver
  - (2) major capitalists and farmers
  - (3) factory workers, landowners, and supporters of the gold standard
  - (4) farmers and supporters of unlimited coinage of silver
  - (5) a coalition of leaders in the Pacific Northwest and the South

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Questions 29 through 32 refer to the following information.

A megalopolis is a continuous strip of urbanized settlement consisting of large populations and many different cities and communities. One such megalopolis in the United States runs for over 400 miles from Boston to Washington, D.C. This urban strip contains twenty percent of the nation's population and incorporates a number of states, cities, suburbs, and smaller local governments.

Although a megalopolis may have relative social integration because of physical proximity, political cooperation is uncommon. As a result, problems that these various communities face in common are difficult to resolve.

**29.** Where can second megalopolis in the United States be found?

- (1) along the Oregon-Washington coast
- (2) along the Arizona-New Mexico border
- (3) in central Oklahoma
- (4) along the southern shores of the Great Lakes
- (5) in western Nevada

**30.** Which of the following is the largest city that is part of the megalopolis described in the passage?

- (1) Boston
- (2) Providence
- (3) New York
- (4) Philadelphia
- (5) Newark

**31.** Why do communities in a megalopolis have difficulty in resolving common problems?

Because with so many communities involved,

- (1) the administrators cannot all be well trained
- (2) some administrators have been elected, whereas others have been appointed
- (3) northerners and southerners rarely agree about anything
- (4) religious differences will make compromise impossible
- (5) it is difficult for all the different administering political bodies to reach any agreement

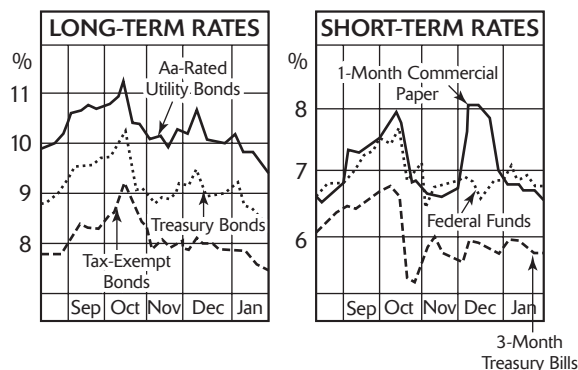
**32.** Which of the following is an example of a common problem these communities would find hard to resolve?

- (1) school bus safety
- (2) air pollution
- (3) city sales taxes
- (4) overcrowded courts
- (5) state income taxes

**33.** Most African nations achieved independence from France, Great Britain, and Belgium during the presidencies of John F. Kennedy and Lyndon B. Johnson. In which of the following decades did most of the nations on the continent of Africa achieve independence?

- (1) 1930s
- (2) 1950s
- (3) 1960s
- (4) 1970s
- (5) 1980s

Questions 34 through 36 refer to the following graphs.



**34.** The highest average interest rate was paid by

- (1) utility bonds
- (2) treasury bonds
- (3) tax-exempt bonds
- (4) commercial paper
- (5) federal funds

**35.** What was the interest rate on treasury bonds on November 1?

- (1) 8%
- (2) 8.5%
- (3) 9%
- (4) 9.5%
- (5) 10%

**36.** According to the graph, when were the lowest long-term rates reached?

- (1) September 30
- (2) October 31
- (3) November 30
- (4) December 31
- (5) January 31

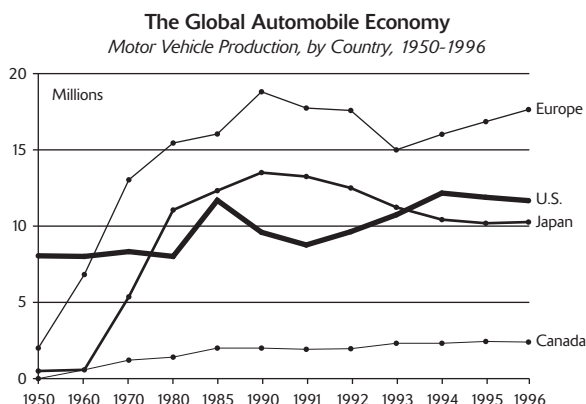
Question 37 refers to the following photograph.





- 37.** The photograph shows Charles Lindbergh and his wife, Anne Morrow Lindbergh, standing in front of his single-engine single-person plane in 1927. His airplane, the Spirit of St. Louis, helped bring him worldwide fame. What courageous feat is Charles Lindbergh best remembered for?
- (1) selling Liberty bonds during World War I, as the picture shows his wife buying a bond
  - (2) shooting down more enemy planes than any other American pilot in World War I
  - (3) flying nonstop in a solo flight from New York to Paris
  - (4) being the first man to fly with his wife across the Atlantic Ocean in a single-engine aircraft
  - (5) flying across the Pacific Ocean, from San Francisco to Tokyo, in a single-engine aircraft
- 38.** One of the more dramatic chapters in American constitutional history deals with the “nationalization” of individual liberties — that is, the changing interpretation of the United States Constitution that has brought about the protection of individual liberties by the United States Bill of Rights against incursion by either national or state governments. Which of the following amendments made this change in interpretation possible?
- (1) the 14th Amendment, which caused the Bill of Rights to be interpreted as restraining the states in much the same way that it restrains the national government
  - (2) the 10th Amendment, which gave the states the power to enforce the Bill of Rights in state matters
  - (3) the 5th Amendment, which protected a person from self-incrimination in giving testimony
  - (4) the 1st Amendment, which protected the rights of Americans from both state and national governmental abuse of civil liberties
  - (5) the 11th Amendment, which endorsed the creation of state Bills of Rights that matched the Bill of Rights in the Constitution

Question 39 refers to the following graph.



**39.** The graph best supports which of the following statements?

- (1) Japan produced more cars than did the United States in 1980, but fewer than were produced in Europe.
- (2) The United States produced fewer cars than did Japan in the 1990s, but more than Europe.
- (3) European production of automobiles grew most dramatically in the 1990s.
- (4) Japan produced more cars in 1993 than it did in 1990.
- (5) Between 1960 and 1980, Canada produced more automobiles than Japan.

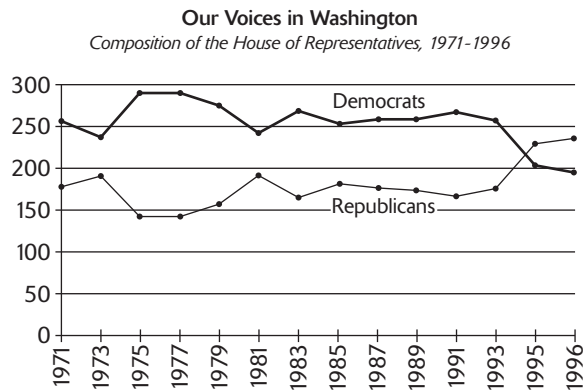
Question 40 refers to the following information.

The passions unleashed by the Civil War carried over into the following 12-year “Reconstruction” period. The plans advanced by Presidents Lincoln and Johnson came into immediate and sharp conflict with the more rigorous schemes advanced by the “Radical” Republicans who soon came to dominate the Congress. Ultimately, the unprecedented impeachment of a President of the United States followed. While the Radicals failed by one vote to remove the President, they did succeed in applying their program in the South. Throughout the late 1860s and into the 1870s the Radical state governments attempted to change centuries of tradition. Dependent as they were upon a large measure of white support, these governments were almost bound to fail. Failure was measurably advanced by such diverse factors as Ku Klux Klan terrorism, Northern indifference, and the brilliant and cynical Compromise of 1877.

**40.** According to the information, the Radical Republicans

- (1) finally compromised in 1877 in order to reach some of their Reconstruction goals
- (2) failed to establish radical state governments to carry out the Reconstruction program
- (3) needed the support of the President to change centuries of tradition in the South
- (4) had to enlist the support of the Ku Klux Klan to advance their Reconstruction programs
- (5) succeeded in applying their program of Reconstruction in the South but failed to make it endure

Question 41 refers to the following graph.



**41.** According to the graph, since 1971 the Democratic Party controlled the House of Representatives

- (1) by almost 200 members in the period from 1973 to 1979
- (2) with about 250 members or more through 1993
- (3) in every congressional election after 1995
- (4) in every congressional election until 1995
- (5) by a slim majority after 1995

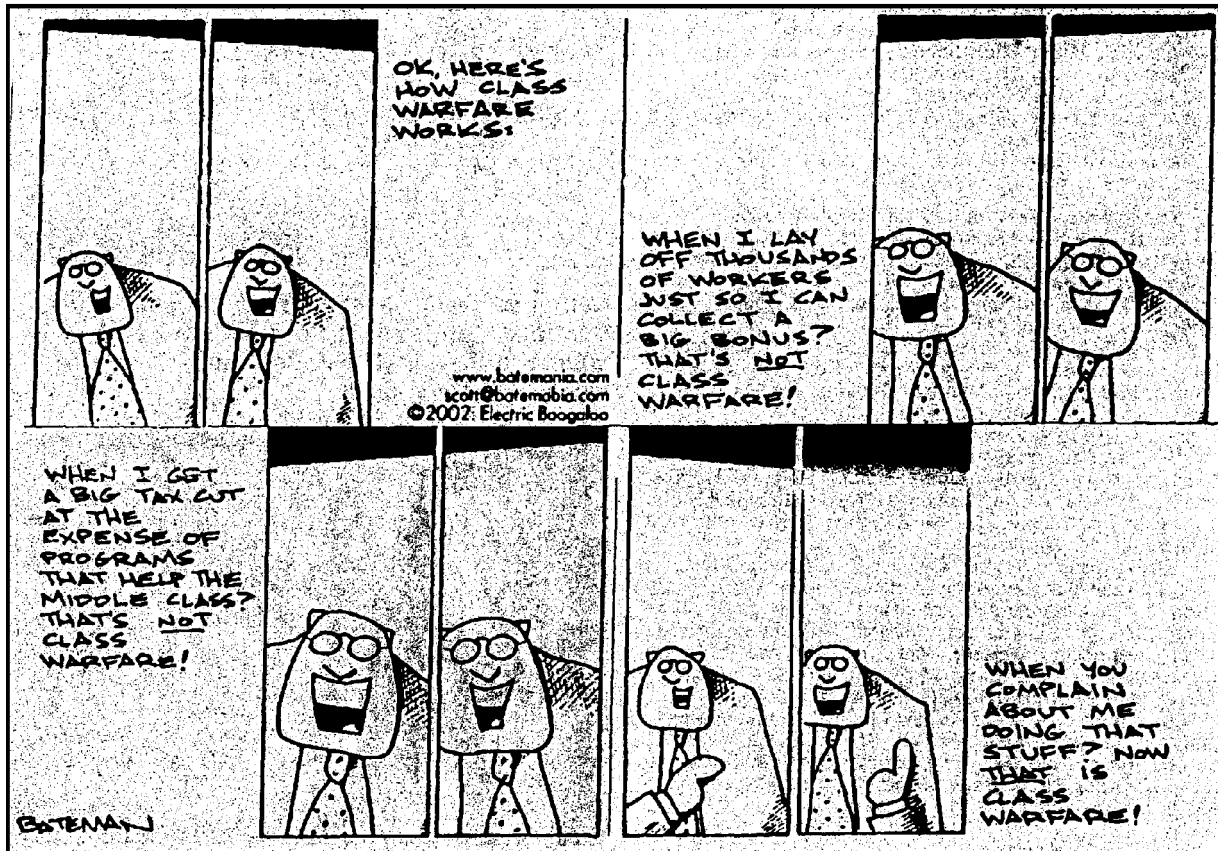
Question 42 refers to the following information and predictions made in the mid-twentieth century.

The average rate of economic growth in the United States has been exceptionally high. In the mid-nineteenth century, per capita real incomes in this country and in the industrialized countries of Europe were roughly equal. In the mid-twentieth century, however, real per capita income in the United States is expected to surpass the historical average. This will result mainly from an unusually rapid growth in the size of the labor force relative to the population as a whole. It is uncertain, however, whether this will lead to increases in the rate of individual productivity.

**42.** According to the information, when compared to advanced countries in Europe, the record of economic growth in the United States

- (1) has been roughly equal to the historical average in both areas
- (2) lagged behind Europe for most of the 19th century
- (3) exceeds the average rate of growth in the late 20th century
- (4) has resulted from a scarce labor force and the high wages paid to skilled workers
- (5) will contribute to increase the rate of individual productivity

Question 43 refers to the following cartoon.



43. The man in the cartoon

- (1) represents a greedy businessman who uses “class warfare” as an excuse for his actions
- (2) is explaining why class warfare is bad for business
- (3) is worried about tax cuts eliminating programs that help the middle class
- (4) has important responsibilities to the success of his business
- (5) understands why class warfare might threaten his well-being

Question 44 refers to the following information.

Reaction to the accomplishments of the French Revolution and the domination of Europe by Napoleon Bonaparte became the official policy of the Congress of Vienna, which met from September 1814, into June 1815. The Congress was a brilliant social gathering of all the leading statesmen and most of the rulers of Europe, assembled in the Austrian capital to carry out the restoration of the titled monarchs who had been deposed by Napoleon and to bring compensations to the final victors of the Napoleonic Wars.

- 44.** According to the information, what were the main purposes of the Congress of Vienna?

Its main purposes were to

- (1) establish democratic rule in the newly freed states and to restore the Stuarts to the English monarchy
- (2) restore deposed monarchs to their thrones and to reward the nations that had defeated Napoleon with new territory
- (3) make new boundaries to prevent the creation of a balance of power and to restore monarchs to their thrones
- (4) prevent Napoleon from becoming Emperor of France and to reward nations that opposed him
- (5) celebrate the arrival of Napoleon in Vienna and to reward the monarchs who attended the meeting

Question 45 refers to the following information.

Protective tariffs for American industry are as old as the nation itself. It is, of course, in the interest of the entire nation that America have a healthy business community. Education was benefiting from national subsidies even before the Constitution was written. Other federal subsidy programs have embraced agriculture, health, science, and economically deprived persons.

- 45.** According to the information, an example of a federal subsidy program would be which of the following?

- (1) paying the moving costs of people living in the way of a highway construction project
- (2) requiring corporations to provide health benefits to their employees
- (3) paying reparations to African-Americans whose ancestors were slaves
- (4) paying farmers not to grow certain crops, in order to avoid a surplus
- (5) buying private property for the construction of government buildings

- 46.** Which of the following is the most reasonable explanation for a shortage of a product on the market?

- (1) Overproduction of product
- (2) Underestimation of demand
- (3) Cheap substitute product available
- (4) Product is not the best on the market
- (5) Overpricing of product

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Questions 47 through 49 refers to the following information.

The great European powers warred almost without interruption between 1792 and 1815. The part played by the United States during this period was a modest one, as befits a minor power caught up in the affairs of major powers. American difficulties during these early years of nationhood stemmed from the difference between the definition of national interest, on the one hand, and the means of accomplishing it, on the other. Critical was the question of protecting and expanding America's foreign trade at a time when the interests of the great powers, particularly England, prevented traditional freedom of the seas and neutrals' rights. Caught up in the machinations of European diplomacy and military might, the Americans were unable to formulate an effective policy. Ultimately, the failure to resolve outstanding differences with England over freedom of the seas, exacerbated by conflicting objectives in the western lands, produced the outbreak of the inconclusive War of 1812.

**47.** According to the information, which of the following is true?

- (1) The United States forcefully challenged the major European powers to honor its neutrality rights.
- (2) Without England's "freedom of the seas" policy, the United States would have been unable to pursue its free trade policy.
- (3) American national interest demanded that the United States declare war on England as early as 1792.
- (4) The War of 1812 was a decisive victory for the United States in its securing of neutrality rights and in gaining control of valuable western lands.
- (5) From a global perspective, the War of 1812 may have been vital for U.S. concerns, but for England and France it was a minor affair.

**48.** According to the information given, which of the following must be true?

The war of 1812 was

- (1) decisive
- (2) started by a carefully planned invasion
- (3) one of many wars in which European countries were involved in during that period
- (4) based on a failure to resolve outstanding differences over England's taxation policies
- (5) provoked by conflicting objectives between the European powers and the western lands



**49.** According to the information given, which of the following was the most important national interest of America during the early years?

- (1) The ability to expand the boundaries of the U.S.
- (2) The means to defend the borders from attack.
- (3) Freedom of the seas to resolve outstanding differences with England.
- (4) Freedom of the seas to protect and expand foreign trade.
- (5) Self-determination to the extent of its involvement in the war of 1812.

Question 50 refers to the following passage.

Different societies try to solve the universal problems of allocation, distribution, growth, and stability in different ways: custom, instinct, fiat and decree, first-come-first-served, and price and market system. The United States has primarily used a price and market system throughout most of its peacetime years.

While there are a number of different kinds of “isms” — capitalism, communism, socialism, etc. — that have been advanced better to organize a society, the four basic alternative forms of economic organization are: (1) authoritarian — where people respond without choice to the commands of the state; (2) individualistic — where people respond by choice to the dictates of their own self-interest; (3) mixed — where people respond to an admixture of both

coercive and economic incentives; and (4) traditional — where people respond on the basis of custom. Most nontraditional economic systems are mixed and are constantly changing.

**50.** According to the information, which of the following examples best describes the individualistic form of economic organization?

- (1) Dictatorships require individuals to create economic systems to benefit society.
- (2) People can choose whichever form of economic activity best suits their plans.
- (3) People follow economic programs that have been successful in the past.
- (4) People decide to blend both individual and governmental economic programs.
- (5) The government demands that people follow the guidelines of experts and advisors.

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT WORK ON ANY OTHER SECTION IN THE TEST.

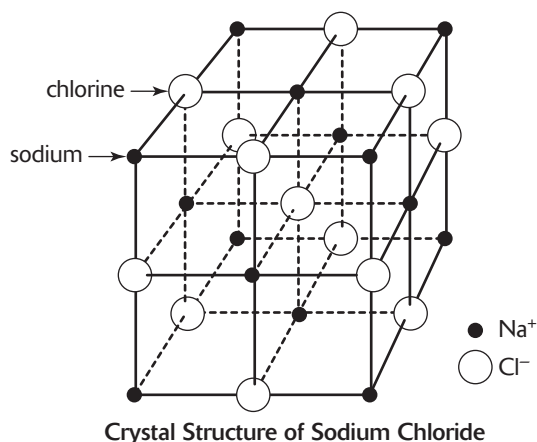


## Science (80 mins., 50 ques.)

*Directions: Choose the one best answer to each question.*

1. As a covered kettle of vegetable soup continues to boil gently on the stove, what happens to the temperature of the soup?
  - (1) It falls very slowly.
  - (2) It is slightly less than  $212^{\circ}$  Fahrenheit.
  - (3) It remains the same.
  - (4) It rises very slowly.
  - (5) It rises quite rapidly.

Question 2 refers to the following diagram and information.



The diagram shows the crystal structure of sodium chloride — ordinary table salt — with the atoms greatly magnified to show their arrangement. Table salt is made up of equal numbers of sodium and chlorine atoms. This solid keeps its shape because the bonding holds the atoms in a rigid, stable arrangement.

2. Based on the diagram and information given, which of the following statements is accurate?
  - A. Atoms of opposite charge are closer than atoms of the same charge.
  - B. Each atom could vibrate in only three directions.
  - C. The crystal faces would be slightly rounded.
  - D. The pattern could be continued in all directions.
  - (1) A and B only
  - (2) A and D only
  - (3) B and C only
  - (4) B and D only
  - (5) C and D only

Questions 3 through 6 refer to the following information.

### Methods of Respiration for Animals

- **Method A** — Respiration from air through moist lung surfaces to blood vessels
- **Method B** — Respiration from air or water to a system of air ducts to the body tissues
- **Method C** — Respiration from water through gill surfaces to blood vessels
- **Method D** — Respiration from air or water by diffusion through a moist surface into the body tissues
- **Method E** — Respiration from air or water by diffusion through thin membrane to blood vessels



**Note:** The simplest way to understand the five methods of respiration is to realize that four (A, B, D, E) are from air, and four (B, C, D, E) are from water.

Each of the following questions describes a situation that refers to one of the methods of respiration. For each question, choose the one method of respiration that best fits the situation described. Each of the preceding categories may be used more than once in the following set of questions.

3. In an earthworm, oxygen passes directly through the body wall into shallow blood vessels.

Which method of respiration is used by an earthworm?

- (1) A
- (2) B
- (3) C
- (4) D
- (5) E

4. A trout must obtain its oxygen from the surrounding water.

Which method of respiration is used by a trout?

- (1) A
- (2) B
- (3) C
- (4) D
- (5) E

5. Beetles obtain their oxygen by means of a network of tiny tubes that begin at the surface and branch out to all interior organs and tissues.

Which method of respiration is used by beetles?

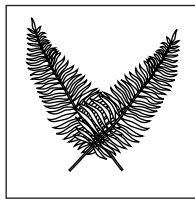
- (1) A
- (2) B
- (3) C
- (4) D
- (5) E

6. Some internal parasites are immersed in the body fluids of their hosts, and from those fluids they absorb oxygen and give up carbon dioxide.

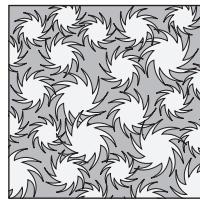
Which method of respiration is used by these parasites?

- (1) A
- (2) B
- (3) C
- (4) D
- (5) E

Question 7 refers to the following pictures.



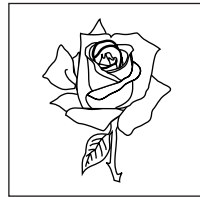
Fern



Moss



Pine



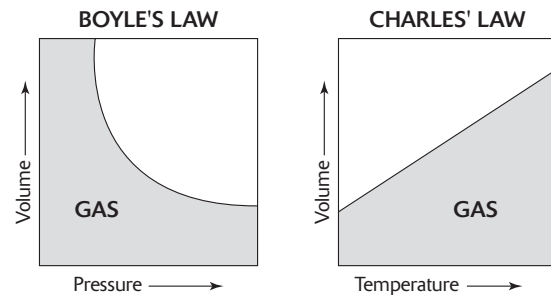
Rose

7. The picture shows four plants with a very different organization and reproduction: a fern, a moss, a pine, and a rose.

What is the order of their appearance by evolution, from earliest to latest?

- (1) fern, moss, rose, pine
- (2) fern, rose, moss, pine
- (3) moss, fern, pine, rose
- (4) pine, fern, moss, rose
- (5) rose, moss, fern, pine

Question 8 refers to the following diagrams and information.



Gases can be compressed to small volumes by pressure, or they can expand to fill any available space. Higher temperature makes gas molecules move faster and hit the walls of their container.

8. Which of the following sentences **BEST** summarizes Charles' Law?
- (1) As the temperature increases, the volume of a gas increases.
  - (2) As the temperature decreases, the volume of a gas increases.
  - (3) As the pressure increases, the volume of a gas increases.
  - (4) The temperature has no direct effect on volume.
  - (5) The volume of a gas increases only when new molecules are added.

Questions 9 through 13 refer to the following information.

### Optical Processes

- (1) **Absorption** — Light of certain colors is captured by the atoms within a substance.
- (2) **Emission** — The atoms of a substance are forced to radiate, or give off, light of certain colors.
- (3) **Linear propagation** — Light moves in a straight line.
- (4) **Reflection** — Light rebounds off the boundary between two substances.
- (5) **Refraction** — Light changes direction when it passes through the boundary between two substances.

Each of the following questions describes occurrences that relate to one of the preceding optical processes. For each question, choose the optical process that best describes the occurrence. Each of the categories may be used more than once in the following set of questions.

9. Which optical process produces an image when you look at a mirror?
- (1) absorption
  - (2) emission
  - (3) linear propagation
  - (4) reflection
  - (5) refraction

10. Which optical process explains why a teaspoon appears to be bent when it is immersed halfway into a cup of weak tea?

- (1) absorption
- (2) emission
- (3) linear propagation
- (4) reflection
- (5) refraction

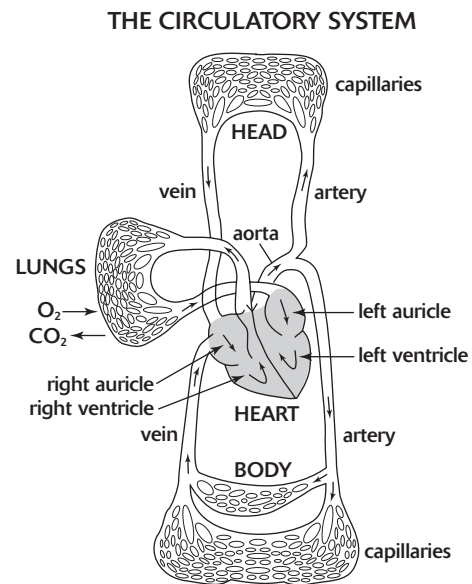
11. Which optical process **BEST** explains the origin of shadows?

- (1) absorption
- (2) emission
- (3) linear propagation
- (4) reflection
- (5) refraction

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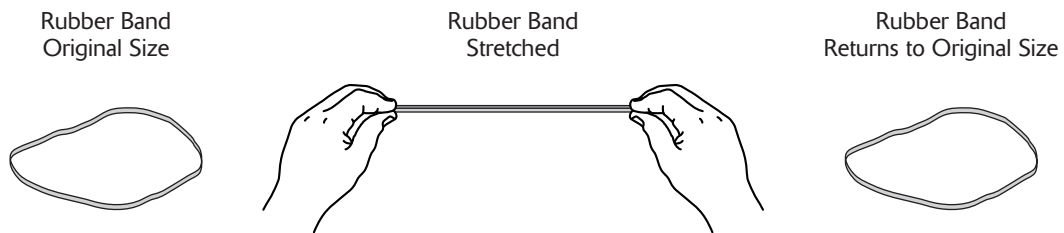
- 12.** Which optical process explains the cause of the glow when a fireplace poker is heated red-hot?
- (1) absorption
  - (2) emission
  - (3) linear propagation
  - (4) reflection
  - (5) refraction
- 13.** Which two optical processes explain why a ripe apple appears red in sunlight?
- (1) absorption and reflection
  - (2) emission and linear propagation
  - (3) reflection and emission
  - (4) refraction and absorption
  - (5) linear propagation and refraction

Question 14 refers to the following diagram.



- 14.** Which of the following sequences within the human circulatory system **BEST** describes the circulation of blood specifically to the body?
- (1) lungs-body-lungs
  - (2) lungs-body-heart-lungs
  - (3) lungs-heart-body-lungs
  - (4) lungs-body-heart-body-lungs
  - (5) lungs-heart-body-heart-lungs

Question 15 refers to the following diagram.



15. Which of the following is the **BEST** explanation of the fact that a rubber band may be stretched and then return to its original size?
- (1) The actual length of the band cannot be altered because it forms a loop.
  - (2) Each long molecule in the band can be deformed but recovers its original shape.
  - (3) Most natural rubber of prime quality has a very high content of gas.
  - (4) The unusual strength of the bonding makes the rubber band unbreakable.
  - (5) Rubber can be melted.

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Question 16 refers to the following information.

Most of the higher animals are described as being mobile because each individual moves about by its own effort. On the other hand, many primitive marine animals are described as being sessile if they are more or less permanently fixed to some rock, plant, or larger animal. Another distinction that may be made involves their independence. A solitary animal basically is capable of surviving alone for some time, whereas a colonial animal always lives in a group.

**16.** Based on the information, how should a honeybee be classified?

- (1) colonial and mobile
- (2) mobile and sessile
- (3) mobile and solitary
- (4) sessile and colonial
- (5) solitary and sessile

**17.** Marble is a metamorphic rock that formed at very high temperature, in excess of 300° centigrade. Yet, that rock type is found at hundreds of locations on the Earth's surface, from Italy to California.

Which of the following **BEST** explains the occurrences of marble in places that have normal temperatures?

- (1) The Earth's surface was much colder in the past than it is today.
- (2) Impacts of giant meteorites have baked the rocks in certain localities.
- (3) The high pressures during earthquakes have squeezed some rocks into marble.
- (4) Long periods of erosion have exposed rocks that formed at great depths.
- (5) Volcanoes bring heat to the surface and erupt flows of marble lavas.

Question 18 refers to the following chart.

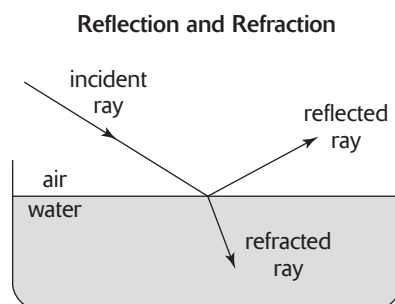
The Number of Amino Acid Differences in Hemoglobin Molecules						
	<i>Horse</i>	<i>Cow</i>	<i>Sheep</i>	<i>Pig</i>	<i>Rabbit</i>	<i>Mouse</i>
Horse	0	18	18	17	25	23
Cow	18	0	13	17	26	20
Sheep	18	13	0	18	29	24
Pig	17	17	18	0	26	24
Rabbit	25	26	29	26	0	28
Mouse	23	20	24	24	28	0

18. The chart shows the number of amino acid differences between portions of the hemoglobin molecules in selected animals.

Using only the data given in the chart, which of the following two animals are **MOST** similar?

- (1) horse and cow
- (2) cow and sheep
- (3) sheep and pig
- (4) pig and rabbit
- (5) rabbit and mouse

Questions 19 through 21 refer to the following diagram and information.



Light rays normally travel in a straight line, but when they pass through a material like glass they slow down and bend, or refract. When the ray leaves the glass, it speeds up and refracts again. Prisms bend light in a particular way to create spectrums.

19. Which of the following materials would refract light?

- A. diamond
- B. steel
- C. water
- D. alcohol
- E. snow

- (1) A, C, and E only
- (2) B, C, and E only
- (3) B, C, and D only
- (4) A, C, and D only
- (5) A, B, and C only

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**20.** Which of the following statements about light is the **MOST** correct?

- (1) When light slows down, it refracts.
- (2) When light is colored, it bends.
- (3) When the speed of light increases, it refracts.
- (4) When the speed of light changes, it refracts.
- (5) When prisms are used, there is no refraction.

**21.** Prisms have been used since the time of the Greeks, but it was Sir Isaac Newton who first used them in his classic experiment to change our understanding of light.

Newton used prisms to prove that

- A. white light is made of several colors that could be separated and then recombined to form white light
- B.  $E = mc^2$  (where  $c$  equals the speed of light)
- C. prisms cannot refract light

- (1) A only
- (2) B only
- (3) C only
- (4) A and B only
- (5) B and C only

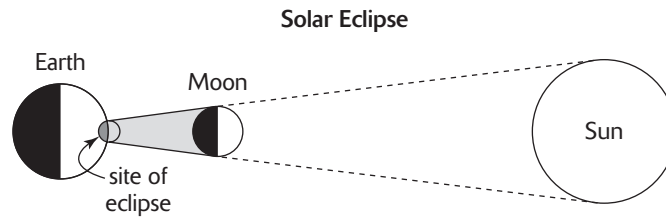
**22.** Kilauea volcano in Hawaii erupts lava as relatively peaceful, nondangerous fountains and flows. By contrast, Mount Saint Helens in Washington erupted very violently, blowing off the mountaintop and spewing ash for many miles. The difference in volcanic style is due to the difference in composition of the lavas.

A comparison of the lava of Mount Saint Helens to that of Kilauea shows that the Washington lava

- (1) was considerably hotter
- (2) flowed more freely
- (3) was more abundant
- (4) was richer in gases
- (5) was somewhat denser



Question 23 refers to the following diagram.



- 23.** The diagram shows the relationship of the Earth, moon, and sun during an eclipse of the sun.

Which of the following conditions are true for such an eclipse?

- A. The Earth's shadow covers half of the moon.
- B. The eclipse would occur in the middle of the night.
- C. For someone watching from Earth, at the site of the eclipse, the moon's disk would seem to cover the sun's disk.
- D. A total eclipse would be seen from a small area only.

- (1) A and B only
- (2) A and D only
- (3) B and C only
- (4) B and D only
- (5) C and D only

- 24.** Two parents with brown eyes give birth to a blue-eyed baby.

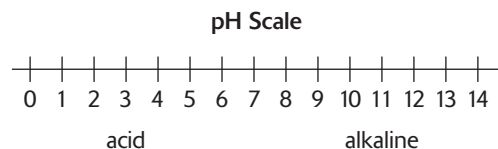
Which of the following possibilities could **BEST** explain the appearance of the blue eyes?

- A. The baby has genes for blond hair.
- B. The gene for blue eyes is recessive compared to the gene for brown eyes.
- C. A gene for brown eyes has undergone mutation.

- (1) A only
- (2) C only
- (3) A and B only
- (4) A and C only
- (5) B and C only

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Question 25 refers to the following diagram and information.



The acid or alkaline strength of a solution is measured on the pH scale. The term “pH” has a capital *H* to represent hydrogen. Acids and alkalis have different hydrogen concentrations. The pH scale runs from 1 to 14, from acid to alkaline.

The pH of a solution commonly is measured by a colored indicator, such as litmus paper. Litmus paper changes color when dipped into acidic or alkaline solutions. It turns red in acids and blue in alkaline bases.

**25.** Which of the following best describes a chemical solution that has a pH equal to 8.5?

- (1) very acidic
- (2) slightly acidic
- (3) neutral
- (4) slightly alkaline
- (5) very alkaline

**26.** The wild fruit fly *Drosophila* has red eyes. Some biologists bred that fly in captivity through many generations. Among thousands of red-eyed flies, the scientists found one fly with white eyes.

Which of the following would **BEST** explain what caused the appearance of the unusual fly?

- (1) adaptation
- (2) competition
- (3) evolution
- (4) mutation
- (5) natural selection

Questions 27 through 29 refer to the following chart.

**Properties of the Five Alkali Metals**

<b><i>Metal Element</i></b>	<b><i>Melting Point in °C</i></b>	<b><i>Boiling Point in °C</i></b>
cesium	29	670
lithium	186	1336
potassium	62	760
rubidium	39	700
sodium	98	880

**27.** Which alkali metal is **MOST LIKELY** to exist as a liquid at 84° Fahrenheit, the temperature of a warm room?

- (1) cesium
- (2) lithium
- (3) potassium
- (4) rubidium
- (5) sodium

**28.** Which alkali metal has the **GREATEST** temperature range in the liquid state?

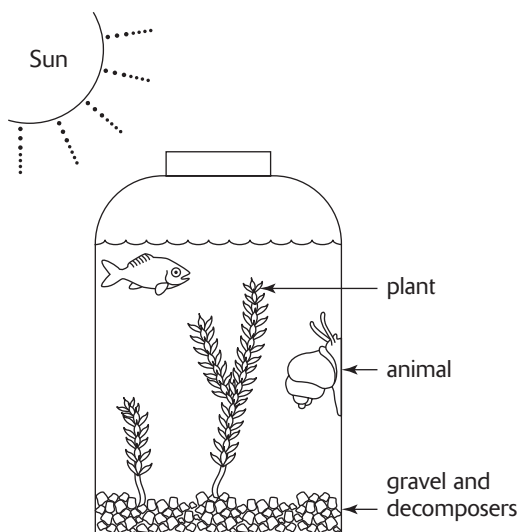
- (1) cesium
- (2) lithium
- (3) potassium
- (4) rubidium
- (5) sodium

- 29.** As a general rule in chemistry, the bonds between atoms are strongest in solids and weakest in gases. The strength of a bond varies inversely with the size of the atoms. “Inversely” means that the bonds vary in opposite directions. Strong bonds go with small atoms, and weak bonds go with large atoms.

Which of the following five alkali elements has the largest atoms?

- (1) cesium
- (2) lithium
- (3) potassium
- (4) rubidium
- (5) sodium

Question 30 refers to the following diagram and information.



A complete world can be created in a sealed jar. The organisms supply the needs of each other, and the system can go on for months.

- 30.** Every system of plants and animals needs an input of energy to continue life.

What is the energy input in this system?

- (1) The growth of the plants continues to supply the needed energy.
- (2) The heat and motion of the animals provide the needed energy.
- (3) The gravel in the floor of the container radiates energy.
- (4) As plants and animals decompose they give off the needed energy.
- (5) Sunlight provides energy to the system through the glass walls of the container.

- 31.** During exploration for petroleum, it is found that an underground reservoir of porous rock usually contains some oil, some water, and some natural gas. The three substances don't mix and occur as separate horizontal layers.

In what order would a drill hole find the three substances?

- (1) natural gas-water-oil
- (2) natural gas-oil-water
- (3) oil-water-natural gas
- (4) water-oil-natural gas
- (5) water-natural gas-oil

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- 32.** Dogs, cats, and horses are among the group of warm-blooded animals that have body temperatures that generally remain constant. Snakes and lizards are among the group of cold-blooded animals.

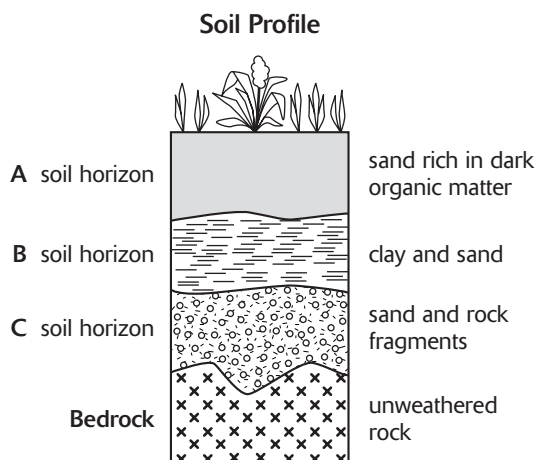
Which of the following is the **BEST** definition of a cold-blooded animal?

- (1) It has a low body temperature.
  - (2) It lives in the deserts or warm regions.
  - (3) It has the temperature of its environment.
  - (4) Its skin feels cold to the touch.
  - (5) It lives in mountains or polar regions.
- 33.** The biotechnology industry is mainly concerned with proteins. It has discovered how to mass-produce many rare natural proteins and, on a more advanced level, has begun to change some proteins in the hope of obtaining new and useful effects.

All of the following goals are being pursued by the biotechnology industry **EXCEPT**

- (1) a cheaper method for producing Portland cement
- (2) crop plants that can be irrigated with sea water
- (3) laboratory tests for disorders that are inherited
- (4) leaner beef that is unusually tender
- (5) treatments or cures for some cancers

Question 34 refers to the following diagram and information.



The diagram shows a soil profile that might be exposed on the side of a recent trench or roadcut. Notice the different soil zones. At the top of the profile, a long period of weathering has produced fine soil. Deeper into the profile, weathering is just beginning to produce fragments that eventually will become sand.

- 34.** What does the profile suggest about the origin of soil?
- (1) An accumulation of organic matter leads to soil.
  - (2) Soil forms as a result of the breakdown of bedrock.
  - (3) Soil occurs where a lot of clay has been deposited.
  - (4) Soil requires an underground source of water.
  - (5) Soil was laid down beneath a lake or ocean.

- 35.** The household glass thermometer is partially filled with mercury and is scaled with marks along the side.



What physical principle justifies the use of a glass thermometer to measure temperature?

- (1) The change in air pressure upon heating moves the mercury.
- (2) Heat produces magnetic fields within a metallic liquid.
- (3) The heated glass contracts to squeeze mercury up from the bulb.
- (4) Liquid mercury expands in a regular manner when heated.
- (5) A solid like glass expands more rapidly than a liquid like mercury.

Questions 36 through 39 refer to the following information.

#### Classes of Chemical Compounds in the Human Body

- (1) **Carbohydrates**, including starches and sugars, are composed of medium-size molecules and are involved in metabolism.
- (2) **Lipids**, including fats and oils, are composed of medium-size molecules and are needed to maintain tissues and membranes.
- (3) **Nucleic acids**, including DNA and RNA, are composed of long molecules and are used to store genetic information.

- (4) **Phosphates**, including ATP and ADP, are composed of medium-size molecules and provide the energy for many chemical reactions.
- (5) **Proteins**, which are built as chains of amino acids, are composed of long molecules and are necessary for many bodily functions.

Each of the following questions describes conditions that relate to one of the classes of chemical compounds in the human body. For each question, choose the one class that best meets the conditions given. Each of the classes of chemical compounds may be used more than once in the following set of questions.

- 36.** Which class of compounds explains why children resemble their parents?

- (1) carbohydrates
- (2) lipids
- (3) nucleic acids
- (4) phosphates
- (5) proteins

- 37.** Which class of compounds includes sucrose (from such things as sugar beets), lactose (from milk), and dextrose (from such things as grapes)?

- (1) carbohydrates
- (2) lipids
- (3) nucleic acids
- (4) phosphates
- (5) proteins

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**38.** Which class of compounds is needed to build tubes for blood and other fluids to circulate through the body?

- (1) carbohydrates
- (2) lipids
- (3) nucleic acids
- (4) phosphates
- (5) proteins

**39.** The amount of energy in food is measured in calories. The average diet gets calories from sources such as bread, potatoes, butter, steak, bacon, chicken, milk, and so on.

All of the following classes of compounds are important as sources of energy in the food we eat **EXCEPT**

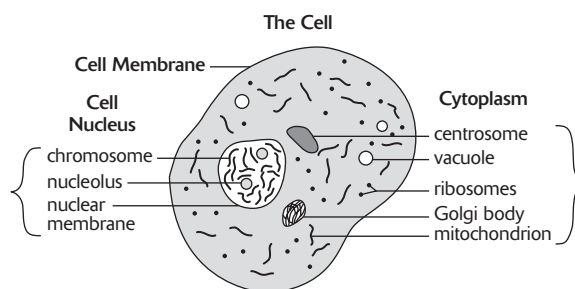
- (1) carbohydrates and lipids
- (2) lipids and nucleic acids
- (3) nucleic acids and phosphates
- (4) phosphates and proteins
- (5) proteins and carbohydrates

**40.** Natural selection is commonly explained as “the survival of the fittest.” For any organic change to affect an entire species, a change in one individual must be inherited by its offspring.

Which of the following choices is necessary for natural selection to alter a species from one superior animal?

- (1) The animal cannot die from famine, drought, or disease.
- (2) The animal must eat other animals.
- (3) The animal should be fully adapted to its environment.
- (4) The animal must outwit its natural predators.
- (5) The animal must participate in reproduction.

Question 41 refers to the following diagram.



**41.** The cytoplasm is one of the three essential subdivisions of any cell.

Which of the following **BEST** describes the basic characteristics of this essential subdivision?

- (1) The cytoplasm varies in consistency from a fluid to a semi-solid.
- (2) The cytoplasm is a consistent fluid.
- (3) The cytoplasm is composed of only two items.
- (4) The cytoplasm occurs within the nucleus.
- (5) The cytoplasm is not present in plant cells.

**42.** Within a natural community of many different plant and animal species, which statement is **MOST LIKELY** to be true?

- (1) Competition is mostly between different species.
- (2) Each species occupies its own place in the environment.
- (3) Environmental conditions will not change significantly.
- (4) The largest meat-eater should have the longest lifespan.
- (5) One species will drive the others to extinction.

**43.** A geological principle is that rocks and structures formed long ago are best explained by studying earth processes now happening. This is sometimes stated as “the present is the key to the past.”

All of the following conclusions are based on that principle **EXCEPT**

- (1) almost all valleys were slowly carved out by stream erosion
- (2) the extinction of dinosaurs was caused by a gigantic meteorite
- (3) a layer of rock salt records an ancient episode of evaporation
- (4) most limestone beds were deposited by organisms
- (5) the rocky soil called “till” was left by melting glaciers

**44.** The Scottish scientist Robert Brown discovered that very small particles suspended in a liquid are moving continually in an irregular, zigzag fashion.

What causes the unceasing “Brownian movement” of small particles?

- (1) cosmic rays
- (2) electromagnetism
- (3) molecular impacts
- (4) ultrasonic sound
- (5) the uncertainty principle

**45.** Enzymes are proteins that act as catalysts during metabolism. For each reaction there is usually only one enzyme that allows it to go forward. The body uses enzymes to control all of its many thousands of chemical reactions.

Which of the following statements **BEST** summarizes the contribution of enzymes?

- (1) They are secreted by endocrine glands and regulate many functions of the body.
- (2) They convert the energy of sunlight into the chemical energy of glycogen.
- (3) They permit certain chemical reactions to proceed at significant speeds.
- (4) They release stored heat at a slow but useful pace.
- (5) They transfer energy from one complex molecule to another complex molecule.

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- 46.** Most bodies of ore that are rich in copper, lead, zinc, or silver are believed to have formed as a result of underground deposits from hot water solutions.

All of the following facts support that understanding **EXCEPT**

- (1) magnetic properties are useful in finding such ore deposits
- (2) many bodies of ore are located along fissures and faults
- (3) the nearby rocks display intense changes due to water
- (4) similar deposits have been seen to form in hot springs
- (5) the ore crystals contain microscopic bubbles filled with water

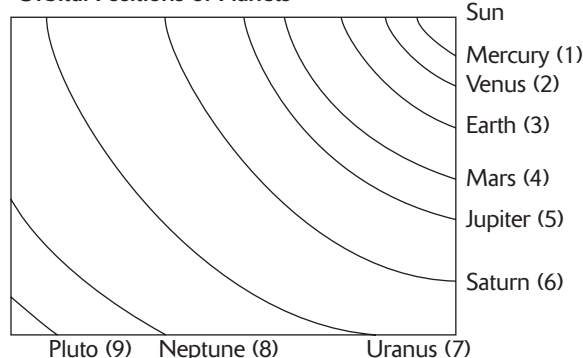
Questions 47 through 50 refer to the following diagram and table.

- 47.** Objects float in water if they are lighter than an equal volume of water. An object with a density of  $1 \text{ g/cm}^3$  has a volume equal to that of the water it displaces.

Which planet or planets would be able to float if there were a lake large enough?

- (1) Mercury
- (2) Earth
- (3) Mercury and Earth
- (4) Jupiter and Uranus
- (5) Saturn

Orbital Positions of Planets



	<i>Average Density in Grams per Cubic Centimeter</i>	<i>Surface Temperature in Degrees Centigrade</i>	<i>Diameter at the Equator in Kilometers</i>
(1)	5.3	345 to -175	5,000
(2)	5.2	500	12,100
(3)	5.6	10	12,800
(4)	4.0	-30 to -90	6,787
(5)	1.34	-150	142,800
(6)	0.70	-180	120,000
(7)	1.3	-190	51,800
(8)	1.7	-215	49,000
(9)	?	-230	6,000



**48.** Which of the following is (are) generally true concerning the position of the planets as they orbit the sun?

- A. Low temperature planets are found farthest from the sun.
- B. Dense planets orbit closer to the sun.
- C. Planets of greater size are closer to the sun.

- (1) A only
- (2) B only
- (3) C only
- (4) A and B only
- (5) B and C only

**49.** Of the planets, Venus has the

- A. second highest density
- B. highest surface temperature
- C. second smallest diameter

- (1) A only
- (2) B only
- (3) C only
- (4) A and B only
- (5) B and C only

**50.** Which of the following can be concluded from the information given?

- (1) The average density of a planet is in direct proportion to the surface temperature.
- (2) The surface temperature of a planet is in direct proportion to the diameter at the equator.
- (3) The diameter at the equator of the planet is in direct proportion to the average density.
- (4) The average density of a planet is inversely proportional to the surface temperature.
- (5) No direct or inverse proportions can be concluded from the information given.

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT WORK ON ANY OTHER SECTION IN THE TEST.



## Language Arts, Reading (65 mins., 40 ques.)

*Directions: Choose the one best answer to each item.*

Questions 1 through 5 refer to the following poem.

### Does the Hard Life of a Chimney Sweep Have Any Reward?

When my mother died I was very young,  
And my Father sold me while yet my tongue  
Could scarcely cry “weep! weep! weep! weep!”  
So your chimneys I sweep, and in soot I sleep.

- (5) There’s little Tom Dacre, who cried when his head,  
That curled like a lamb’s back, was shaved: so I said,  
“Hush, Tom! never mind it, for when your head’s bare  
You know that the soot cannot spoil your white hair.”

And so he was quiet and that very night

- (10) As Tom was a-sleeping, he had such a sight!  
That thousands of sweepers, Dick, Joe, Ned, and Jack,  
Were all of them locked up in coffins of black.

And by came an Angel who had a bright key,  
And he opened the coffins and set them all free;

- (15) Then down a green plain leaping, laughing, they run,  
And wash in a river, and shine in the Sun.

Then naked and white, all their bags left behind,  
They rise upon clouds and sport in the wind;  
And the Angel told Tom, if he’d be a good boy,

- (20) He’d have God for his father, and never want joy.

And so Tom awoke; and we rose in the dark,  
And got with our bags and our brushes to work.  
Though the morning was cold, Tom was happy and warm;  
So if all do their duty they need not fear harm.

1. When the author writes “weep!” (line 3), he suggests with an apostrophe (’) that a letter is missing from the beginning of the word. That letter is most probably which of the following?

- (1) s
- (2) q
- (3) w
- (4) d
- (5) p

2. The “bags left behind” mentioned in line 17 are probably which of the following?

- (1) bags of groceries, which the boys will not need in heaven
- (2) bags of equipment used in the job of chimney-sweeping
- (3) luggage in which the boys keep their traveling clothes
- (4) bags that had been taken out of the coffins
- (5) sleeping bags

3. Which of the following best characterizes Tom’s dream?

- (1) It has a happy beginning and a horrible ending.
- (2) It is the dream that many chimney sweeps have.
- (3) It portrays the happy life of a chimney sweep.
- (4) It has a scary beginning and a happy ending.
- (5) It shows that chimney sweeps are really God’s favorite workers.

4. In line 20, the phrase “and never want joy” probably means which of the following?

- (1) have enough joy
- (2) look for joy forever
- (3) never have any joy
- (4) give all joy away
- (5) have joy only in his dreams

5. What time of day does Tom awaken, in line 21?

- (1) just after sundown
- (2) close to midnight
- (3) at midday
- (4) at the break of dawn
- (5) very early in the morning, before dawn

Questions 6 through 13 refer to the following excerpt from an essay.

### Are Insects as Warlike as Humans?

One day when I went out to my wood pile, or rather my pile of stumps, I observed two large ants, the one red, the

other much larger, nearly half an inch long, and black, fiercely contending with one another. Having once got hold they never let go, but struggled and wrestled and rolled on the chips incessantly. Looking farther, I was surprised to find that the chips were covered with such combatants, that it was not a *duellum*, but a *bellum*, a war between two races of ants, the red always pitted against the black, and frequently two red ones to one black. The legions of these Myrmidons covered all the hills and vales in my wood-yard, and the ground was already strewn with the dead and dying, both red and black. It was the only battle which I have ever witnessed, the only battle-field I ever trod while the battle was raging; internecine war; the red republicans on the one hand, and the black imperialists on the other.

On every side they were engaged in deadly combat, yet without any noise that I could hear, and human soldiers never fought so resolutely. I watched a couple that were fast locked in each other’s embraces, in a little sunny valley amid the chips, now at noonday prepared to fight till the sun went down, or life went out. The smaller red champion had fastened himself like a vice to his adversary’s front, and through all the tumblings on that field never for an instant ceased to gnaw at one of his feelers near the root, having already caused the other to go by the board; while the stronger black one dashed him from side to side, and, as I saw on looking nearer, had already divested him of several of his members. They fought with more pertinacity than bulldogs. Neither manifested the least disposition to retreat. It was evident that their battle-cry was “Conquer or die.” In the meanwhile there came along a single red ant on the hillside of this valley, evidently full of excitement, who either

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(50) had despatched his foe, or had not yet taken part in the battle; probably the latter, for he had lost none of his limbs; whose mother had charged him to return with his shield or upon it.

**6.** In the excerpt, the author compares which of the following?

- (1) the strength of ants with the strength of other insects
- (2) ants with human soldiers
- (3) the battle that takes place around his woodpile with battles he has witnessed elsewhere
- (4) the republicans and the imperialists
- (5) the struggle for survival with the struggle for victory

**7.** The writing style in this passage would probably be appropriate in which of the following?

- (1) a journal of personal experiences
- (2) an army recruiting advertisement
- (3) a history book
- (4) a scientific study of ants and their behavior
- (5) a news story

**8.** The “single red ant” that the author describes at the end of the passage is spoken of as a warrior who has done which of the following?

- (1) lost his shield
- (2) been seriously injured
- (3) not been hurt in the battle
- (4) left his shield with his mother
- (5) just fought another ant and lost

**9.** As used in this excerpt, what does “pertinacity” (line 43) mean?

- (1) defending weakly
- (2) pressing hard
- (3) reacting calmly
- (4) holding firmly
- (5) shouting angrily

**10.** Why does the author use the phrase “red republicans” (line 23)?

The author uses the phrase to

- (1) suggest a possible comparison between the ant army and a human army
- (2) suggest that even creatures as tiny as ants probably belong to political parties
- (3) lead to a discussion of the actual battle between the republicans and the imperialists
- (4) express his own political views
- (5) warn the reader that she or he should view any battle in the animal kingdom as a political battle

**11.** Which of the following terms best describes the author’s description of the battle between the red ants and the black ants?

- (1) factual
- (2) comical
- (3) simple
- (4) angry
- (5) imaginative

12. The author is likely to agree with which of the following statements?

- (1) A writer must be a neutral observer.
- (2) When writing about nature, one must use the language of science.
- (3) A writer can describe an ordinary situation in an extraordinary way.
- (4) Facts and statistics are important tools for any writer.
- (5) If a writer cannot write with cool objectivity, he had better not write at all.

13. When the author says “that it was not a *duellum*, but a *bellum*” (lines 11–12), he means which of the following?

- (1) It was not a duel, but a war.
- (2) The war of ants was a series of duels.
- (3) This was not wrestling, but rather combat.
- (4) Each of the duels led to a battle.
- (5) Winning the war meant winning the duels.

Questions 14 through 18 refer to the following excerpt from a novel.

### How Is Elinor Different from Her Mother and Sister?

- Elinor, the eldest daughter whose advice was so effectual, possessed a strength of understanding and coolness of judgment which qualified her, though
- (5) only nineteen, to be the counsellor of her mother, and enabled her frequently to counteract, to the advantage of them all, that eagerness of mind in Mrs. Dashwood which must generally have
- (10) led to imprudence. She had an excellent heart; her disposition was affectionate,

and her feelings were strong; but she knew how to govern them; it was a knowledge which her mother had yet to learn, and which her sister, Marianne, had resolved never to be taught.

- (15) Marianne’s abilities were in many respects quite equal to Elinor’s. She was lively and clever, but eager in everything; her sorrows, her joys, could have no moderation. She was generous, amiable, interesting: she was everything but prudent. The resemblance between her and her mother was strikingly great.

- (20) Elinor saw with concern the excess of her sister’s sensibility, but by Mrs. Dashwood it was valued and cherished. They encouraged each other now in the violence of their feelings. Elinor, too,
- (30) was deeply afflicted; but still she could struggle, she could exert herself.

14. Listed according to age with the oldest first, the three characters mentioned are which of the following?

- (1) Elinor, Mrs. Dashwood, Marianne
- (2) Mrs. Dashwood, Elinor, Marianne
- (3) Mrs. Dashwood, Marianne, Elinor
- (4) Elinor, Marianne, Mrs. Dashwood
- (5) Marianne, Mrs. Dashwood, Elinor

15. According to the excerpt, which of the following best describes Elinor?

She

- (1) is cold and unfeeling
- (2) feels less strongly than Marianne
- (3) feels more strongly than Marianne
- (4) controls her feelings, unlike Marianne
- (5) controls her feelings, like Marianne

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**16.** Mrs. Dashwood and Marianne share all of the following qualities EXCEPT which of the following?

- (1) eagerness
- (2) imprudence
- (3) affection
- (4) impulsiveness
- (5) moderation

**17.** The best title for a story about Elinor and Marianne might best be which of the following?

- (1) Hope and Hatred
- (2) Pride and Prejudice
- (3) Sadness and Sorrow
- (4) Sense and Sensibility
- (5) Happiness and Hope

**18.** The passage suggests that strong feelings are which of the following?

- (1) important, but must be controlled
- (2) dangerous, and to be avoided at all costs
- (3) characteristic of the young but not the old
- (4) characteristic of the old but not the young
- (5) usually accompanied by prudence

Questions 19 through 23 refer to the following excerpt from a play.

**Is Vivie Warren a Modern Woman?**

Scene: By a cottage in the country, a young lady lies in a hammock reading and making notes. A large pile of books and papers are on a wooden chair nearby. A carefully dressed middle-aged man enters and looks over the fence.

THE GENTLEMAN: (taking off his hat) I beg your pardon. Can you direct me to Hindview — Mrs. Alison's?

(10) THE YOUNG LADY: (glancing up from her book) This is Mrs. Alison's. (She resumes her work.)

THE GENTLEMAN: Indeed! Perhaps — may I ask are you Miss Vivie Warren?

THE YOUNG LADY: (sharply, as she turns on her elbow to get a good look at him) Yes.

THE GENTLEMAN: (daunted and conciliatory) I'm afraid I appear intrusive. My name is Praed. (Vivie at once throws her books upon the chair, and gets out of the hammock.) Oh, pray don't let me disturb you.

(25) VIVIE: (striding to the gate and opening it for him) Come in, Mr. Praed. (He comes in.) Glad to see you. (She proffers her hand and takes his with a resolute and hearty grip. She is an attractive young, middle-class Englishwoman. Age 22.)

PRAED: Very kind of you indeed, Miss Warren. (She shuts the gate with a vigorous slam. He passes in to the middle of the garden, exercising his fingers, which are slightly numbed by her greeting.) Has your mother arrived?

VIVIE: Is she coming?

(40) PRAED: (surprised) Didn't you expect us?

VIVIE: No.

PRAED: Now, goodness me, I hope I've not mistaken the day. That would be just like me, you know. Your mother  
(45) arranged that she was to come down from London and that I was to come over from Horsham to be introduced to you.

VIVIE: Did she? H'm! My mother has rather a trick of taking me by surprise —  
(50) to see how I behave myself when she's away, I suppose. I fancy I shall take my mother very much by surprise one of these days, if she makes arrangements that concern me without consulting me  
(55) beforehand. She hasn't come.

PRAED: (embarrassed) I'm really very sorry.

VIVIE: It's not your fault, Mr. Praed, is it? And I'm very glad you've come.  
(60) You are the only one of my mother's friends I have ever asked her to bring to see me.

PRAED: Okay, now this is really very good of you, Miss Warren!

(65) VIVIE: Will you come indoors; or would you rather sit out here and talk?

PRAED: It will be nicer out here, don't you think?

VIVIE: Then I'll go and get you a chair. (She goes to the porch for a garden chair.)  
(70)

PRAED: (following her) Oh, pray, pray! Allow me. (He lays hands on the chair.)

(75) VIVIE: (letting him take it) Take care of your fingers; they're rather dodgy things, those chairs. (She goes across to the chair with the books on it; pitches them into the hammock.)

(80) PRAED: (who has just unfolded his chair) Oh, now do let me take that hard chair. I like hard chairs.

VIVIE: So do I. Sit down, Mr. Praed.

PRAED: By the way, though, hadn't  
(85) we better go to the station to meet your mother?

VIVIE: (coolly) Why? She knows the way.

PRAED: (disconcerted) Er—I suppose she does. (He sits down.)  
(90)

**19.** The first impression of Vivie that the scene conveys is that she is which of the following?

- (1) lazy
- (2) shy
- (3) studious
- (4) athletic
- (5) vain

**20.** Which of the following is a piece of visually comic action in this scene?

Vivie's

- (1) reading
- (2) getting out of the hammock
- (3) closing the gate
- (4) handshake
- (5) walking to the porch

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**21.** Vivie's response to Praed's remarks about her mother in this scene suggests which of the following?

- (1) Praed has never met her mother.
- (2) Praed dislikes her mother.
- (3) Vivie and her mother are very alike.
- (4) Vivie and her mother get along well.
- (5) Vivie and her mother do not get along well.

**22.** Compared to Vivie, Mr. Praed is more

- (1) authoritative
- (2) conventional
- (3) earnest
- (4) successful
- (5) musical

**23.** Which of the following of Vivie's actions probably does not agree with Praed's expectations of how a female should behave?

- (1) her allowing him to unfold the garden chair
- (2) her glancing up from her book
- (3) her getting out of the hammock
- (4) her handshake
- (5) her inviting him indoors

Questions 24 through 29 refer to the following excerpt from an article.

### Does "Colorizing" Old Movies Make Them Better?

When the film fans dream of old movies, they dream in black and white. They think of Lillian Gish's *Scarlet Letter* emblazoned in gray. For them the true colors of *Red River*, *Blue Denim*, *The Golden Boy*, and *The Green Pastures* are those shades of pearl and ivory determined by the films' cinematographers. And when Bogie says, "here's looking at you, kid," movie lovers gaze at Ingrid Bergman in glorious monochrome.

But who cares about the visual integrity of Hollywood movies when there is a buck to be made? Not the studios or the TV networks. For them the golden oldies are either profitable inventory or chopped celluloid. And now the archives are being raided by technicians with a new idea: "colorizing" the black-and-white films of Hollywood's Golden Age through computer wizardry. The film is copied onto video and broken down into gradations of gray. An "art director" sits at a console and chooses the colors for each face, dress, and prop, which the computerized "paintbrush" adds frame by frame. (Cost per film about \$180,000.) Voila! Jimmy Stewart's Christmas tree in *It's a Wonderful Life* is as green as greenbacks.

Some people, especially young people nurtured on color TV, like the idea. In a poll by Ted Turner's Cable News Network the day the colorized *Yankee Doodle Dandy* premiered on Turner's SuperStation WTBS last month, 61% of the call-in respondents preferred to see old films in color. Good thing: the Turner Broadcasting System has



- ordered the coloring of 100 black-and-white films from the MGM and Warner Bros. libraries. “We’re not trying to make bad films great,” says Jack Petrik, executive vice president of WTBS. “We’re trying to make great films better.” Charles Powell, executive vice president of Color Systems Technology, which provides the new versions to TBS, calls the process “simply another state-of-the-art enhancement. Would you rather have a film sit on a shelf in its ‘pure’ form or be seen by large numbers of people only because it was colored?”

- 24.** The question that begins with line 13 indicates which of the following about the writer of this excerpt?

The writer

- (1) is most interested in making a buck
  - (2) is on the side of the studios and TV networks
  - (3) thinks that “visual integrity” is more important than “making a buck”
  - (4) often dreams of old movies
  - (5) thinks that old movies are nothing more than “chopped celluloid”
- 25.** Which of the following conclusions is expressed in the excerpt?
- (1) People who grew up watching color TV are in favor of “colorizing.”
  - (2) Ted Turner is one of those movie fans who “dream in black and white.”

- (3) *Yankee Doodle Dandy* is available only in black and white.
- (4) Thirty-nine percent of those who called WTBS are not movie fans.
- (5) Most black-and-white movies were made by MGM and Warner Brothers.

- 26.** What is the writer probably trying to indicate by putting quotation marks around the term “art director” in line 24?

- (1) The writer is using the art director’s own words.
- (2) “Art director” is another name for “paintbrush.”
- (3) The art director is the most important person in the colorizing process.
- (4) There are as many art directors as there are paintbrushes.
- (5) “Art director” is a title that doesn’t really describe the actual job.

- 27.** Which of the following does the first paragraph suggest?

- (1) Ingrid Bergman objected to making films in color.
- (2) Film fans rarely choose to watch a movie in color.
- (3) *Red River* was a black-and-white film.
- (4) Most cinematographers dream in black and white.
- (5) No old movies were made in color.

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**28.** With which of the following would Jack Petrik probably agree?

- (1) Color films are better than black-and-white films.
- (2) WTBS should not colorize more than 100 films.
- (3) *Yankee Doodle Dandy* was the best choice for the first colorized film.
- (4) Colorizing films does not affect their quality.
- (5) More people today prefer black-and-white over color films.

**29.** Based on the information in the article, which of the following is probably true about colorization?

- (1) Only WTBS is able to do it.
- (2) It relies upon computer technology.
- (3) Most actors are likely to approve of it.
- (4) It will not result in profit for the studios or networks.
- (5) It will not change the dreams of film fans.

Questions 30 through 34 refer to the following excerpt.

**What Feelings Does John Have About His Task?**

- (5) “John,” said his mother, “you sweep the front room for me like a good boy, and dust the furniture. I’m going to clean up in here.” “Yes’m,” he said, and rose. She had forgotten about his birthday. He swore he would not mention it. He would not think about it anymore. To sweep the front room meant, principally, to sweep the heavy red and green and purple
- (10) Oriental-style carpet that had once been

that room’s glory, but was now so faded that it was all one swimming color, and so frayed in places that it tangled with the broom. John hated sweeping this carpet, (15) for dust rose, clogging his nose and sticking to his sweaty skin, and he felt that should he sweep it forever, the clouds of dust would not diminish, the rug would not be clean. It became in his imagination (20) his impossible, lifelong task, his hard trial, like that of a man he had read about somewhere, whose curse it was to push a boulder up a steep hill, only to have the giant who guarded the hill roll the boulder down again and so on, forever, (25) throughout eternity; he was still out there, that hapless man, somewhere at the other end of the earth, pushing his boulder up the hill. He had John’s entire sympathy, (30) for the longest and hardest part of his Saturday mornings was his voyage with the broom across this endless rug; and coming to the French doors that ended the living-room and stopped the rug, he felt (35) like an indescribably weary traveler who sees his home at last. Yet for each dustpan he so laboriously filled at the doorsill, demons added to the rug twenty more; he saw in the expanse behind him the dust (40) that he had raised settling again into the carpet; and he gritted his teeth, already on edge because of the dust that filled his mouth, and nearly wept to think that so much labor brought so little reward.

(45) Nor was this the end of John’s labor; for, having put away the broom and the dustpan, he took from the small bucket under the sink the dustrag and the furniture oil and a damp cloth, and returned (50) to the living-room to excavate, as it were, from the dust that threatened to bury them, his family’s goods and gear. Thinking bitterly of his birthday, he attacked the mirror with the cloth, watching his face appear as out of a cloud. (55)

- 30.** In the second paragraph, John swears he won't think about his birthday any more. From evidence in the excerpt, what is the most likely reason for this?

He

- (1) resents being treated like a child
- (2) feels hurt and angry because his mother hasn't remembered his birthday
- (3) knows he must concentrate on the job he is supposed to do so that his mother won't punish him
- (4) is afraid he will begin to cry if he thinks about his birthday
- (5) believes his mother will remember his birthday later in the day

- 31.** What does the description of the carpet in lines 9–14 suggest about John's family?

It indicates that they

- (1) love beautiful things
- (2) live beyond their financial means
- (3) tend to show off for the neighbors
- (4) don't have much money to spend
- (5) are careless with their belongings

- 32.** Which of the following does John resent the most about sweeping the carpet?

- (1) With this task, he feels no sense of accomplishment.
- (2) The job is not only boring but also time consuming.
- (3) The dust clogs his nose and stings his eyes.

- (4) The carpet itself is frayed and faded.
- (5) His mother expects him to do the task every Saturday.

- 33.** Which of the following best describes John's thoughts about his task?

They are

- (1) exciting and colorful
- (2) humorous
- (3) filled with revenge
- (4) intelligent and philosophical
- (5) dramatic and exaggerated

- 34.** What is the purpose of the last line of the excerpt?

The last line

- (1) shows that John is immature and dishonest
- (2) summarizes the work John has done
- (3) helps explain John's mood during his task
- (4) reminds the reader of John's mother's cruelty
- (5) presents John from a different point of view

Questions 35 through 40 refer to the following excerpt from a short story.

### What Kind of Person Is Miss Louise?

- In the tiny little river town of Arden, Mississippi, a brilliant old lady lay dying. Her name was Louise Winchester Biggs and she was the younger sister of
- (5) Dakota's grandmother, Heebe. When Dakota was a child she had gone many times to stay in Miss Louise's house and visit her Winchester cousins. Miss Louise's house was the most wonderful
- (10) place Dakota had ever been in her life, before and since the summer visits. In the first place, every room was lined with bookshelves full of books. In the second place, the house sat on an acre of
- (15) land in the very center of town, and from it Dakota and her cousin Taylor could walk out to the drugstore or the grocery or down to the car dealership to look at the new Pontiacs or just stroll around
- (20) and see what there was to see. They could get into Miss Louise's Buick, which she allowed them to drive as soon as they could reach the pedals, and drive to the levee and walk up on it to look at
- (25) the river.

- They could sit in the porch swings and read the books and nobody ever came and found them and said, Do this, do that, do the other thing, because they were guests
- (30) in Miss Louise's house and a guest could do no wrong. At noon the cook would put fried chicken and cornbread and sliced tomatoes and green beans and spinach on the table and Miss Louise would come
- (35) out with her hair pulled neatly back into a bun and her ironed shirtwaist dresses held at the top button with a pair of Air Force wings and they would drink tea with lemon and sugar and eat if they were

- (40) hungry and talk about things. Miss Louise never talked about herself. If her corns hurt and she was having to wear house shoes all day, if the rains would not come and water the cotton fields, if she
- (45) missed her dead husband or the son she lost in the war, you would never know it at her table.
- "What are you girls finding to do?" she would begin. "I think you should
- (50) have a party."

- 35.** In the excerpt, who is Dakota and what is her relationship to Miss Louise Biggs?

She is a

- (1) child describing her great aunt
- (2) friend of Miss Louise's
- (3) woman recalling childhood visits to her great aunt
- (4) woman describing her grandmother
- (5) friend of Miss Louise's niece Taylor

- 36.** How does Dakota feel about Miss Louise?

She

- (1) admires her
- (2) pities her
- (3) is determined to help her face death
- (4) envies her because her house is filled with books
- (5) wants to be just like her

- 37.** According to the excerpt, why doesn't Miss Louise make Dakota and Taylor do chores?

She

- (1) is overly permissive
- (2) feels sorry for them
- (3) remembers what it is like to be a child
- (4) treats them as she would treat any guest in her home
- (5) wants them to love her and continue to visit her

- 38.** On the basis of the excerpt, what would Miss Louise's reaction probably be if Dakota and Taylor had an accident in her car?

She would be

- (1) confused and distracted
- (2) amused and indifferent
- (3) embarrassed and guilty
- (4) angry and silent
- (5) concerned and helpful

- 39.** Why does Dakota describe Miss Louise as "brilliant" (line 2)?

Miss Louise

- (1) knows how to treat people
- (2) is beautiful and refined
- (3) has many books in her home
- (4) has been educated in the finest schools
- (5) owns and manages a large home and extensive property

- 40.** Which of the following statements can be supported by evidence from the excerpt?

- (1) Miss Louise attended college in the East.
- (2) Although she owns property, Miss Louise has never had a job.
- (3) After her death, Miss Louise's house will go to Dakota and Taylor.
- (4) Miss Louise's son was in the Air Force.
- (5) Miss Louise doesn't want anyone to know she is dying.

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT WORK ON ANY OTHER SECTION IN THE TEST.



# Mathematics (45 mins., 25 ques.)

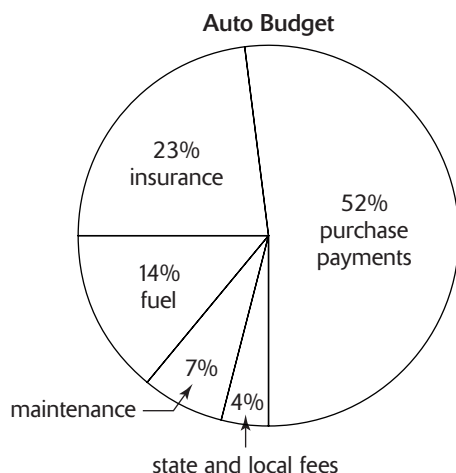
## PART I

### FORMULAS

Description	Formulas
<b>AREA (A) of a:</b>	
square	$A = s^2$ ; where $s$ = side
rectangle	$A = lw$ ; where $l$ = length, $w$ = width
parallelogram	$A = bh$ ; where $b$ = base, $h$ = height
triangle	$A = \frac{1}{2}bh$ ; where $b$ = base, $h$ = height
trapezoid	$A = \frac{1}{2}(b_1 + b_2)h$ ; where $b_1$ and $b_2$ are the bases and $h$ is the height
circle	$A = \pi r^2$ ; where $\pi = 3.14$ , $r$ = radius
<b>PERIMETER (P) of a:</b>	
square	$P = 4s$ ; where $s$ = side
rectangle	$P = 2l + 2w$ ; where $l$ = length, $w$ = width
triangle	$P = a + b + c$ ; where $a$ , $b$ , and $c$ are the sides
<b>CIRCUMFERENCE (C) of a circle</b> $C = \pi d$ ; where $\pi = 3.14$ , $d$ = diameter	
<b>VOLUME (V) of a:</b>	
cube	$V = s^3$ ; where $s$ = side
rectangular container	$V = lwh$ ; where $l$ = length, $w$ = width, $h$ = height
square pyramid	$V = \frac{1}{3} \times (\text{base edge})^2 \times \text{height}$
cylinder	$V = \pi r^2 h$ ; where $\pi = 3.14$ , $r$ = radius, $h$ = height
cone	$V = \frac{1}{3} \times \pi \times r^2 \times h$ ; where $r$ is the radius, $h$ is the height, and $\pi = 3.14$
<b>PYTHAGOREAN RELATIONSHIP</b> $a^2 + b^2 = c^2$ ; where $a$ and $b$ are the legs of a right triangle and $c$ is the hypotenuse	
<b>COORDINATE GEOMETRY</b>	
distance ( $d$ ) between two points in a plane	$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ ; where $(x_1, y_1)$ and $(x_2, y_2)$ are two points in a plane
slope of a line ( $m$ ) = $(y_2 - y_1)/(x_2 - x_1)$ ; where $(x_1, y_1)$ and $(x_2, y_2)$ are two points in a plane	
<b>MEASURES OF CENTRAL TENDENCY</b>	
mean	mean = $\frac{x_1 + x_2 + \dots + x_n}{n}$ ; where the $x$ 's are the values for which a mean is desired, and $n$ = number of values in the series
median	median = the point in an ordered set of numbers at which half of the numbers are above and half of the numbers are below this value
simple interest ( $i$ )	$i = prt$ ; where $p$ = principal, $r$ = rate, $t$ = time
distance ( $d$ ) as a function of rate and time	$d = rt$ ; where $r$ = rate, $t$ = time
total cost ( $c$ )	$c = nr$ ; where $n$ = number of units, $r$ = cost per unit

**Directions:** You have 45 minutes to complete questions 1–25. You may use your calculator with these questions only. Choose the one best answer to each question.

1. The graph below shows how the average adult spends his or her auto budget.



According to the graph, what percent of the auto budget is left after purchase payments and insurance?

- (1) 100%
- (2) 75%
- (3) 50%
- (4) 25%
- (5) 0%

2. Alex has a job working for the Adams Apple Orchard. Two hundred new apple trees just arrived, which Mr. Adams would like Alex to plant. Alex can plant an average of 15 trees per workday. At this rate, approximately how many workdays will it take Alex to plant the 200 trees?

- (1) between 7 and 9
- (2) between 9 and 11
- (3) between 11 and 13
- (4) between 13 and 15
- (5) between 15 and 17

3. A car that usually sells for \$10,000 has been discounted by 20%. What is the sale price?

- (1) \$ 20.00
- (2) \$ 80.00
- (3) \$2,000.00
- (4) \$8,000.00
- (5) \$8,800.00

4. Maria's video game scores this week were 186, 124, and 146. What is Maria's mean (average) score?

**PLEASE DO NOT WRITE IN THIS TEST BOOKLET.**

Mark your answer in the circles in the grid on your answer sheet.

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5. If  $4x - 18 = 6$ , what is the value of  $x$ ?

**PLEASE DO NOT WRITE IN THIS TEST BOOKLET.**

Mark your answer in the circles in the grid on your answer sheet.

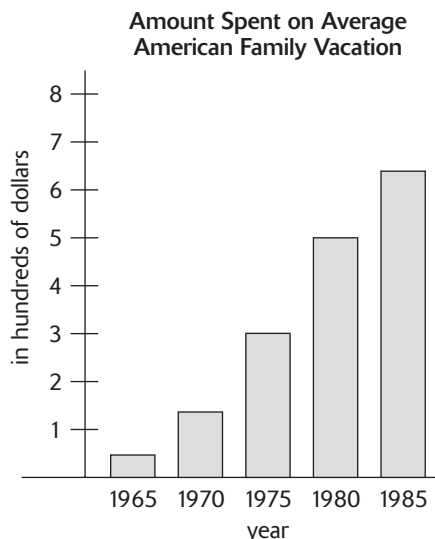
6. Last summer Arnie traveled to China. He bought silk fabric for \$250 and jade jewelry for \$380. As Arnie was leaving China, the customs agent informed him that he must pay a 15% export tax on these items. How much was Arnie's export tax?

- (1) \$630.00
- (2) \$535.50
- (3) \$150.00
- (4) \$ 94.50
- (5) \$ 15.00

7. Lorene jogs  $1\frac{1}{2}$  hours each day. Last week she jogged five days. How many hours did Lorene jog last week?

- (1)  $6\frac{1}{2}$
- (2) 7
- (3)  $7\frac{1}{2}$
- (4) 8
- (5)  $8\frac{1}{2}$

8. The graph below shows the amount of money that was spent on the average American family vacation from the years 1965 to 1985.



According to the graph, by approximately how much did the amount spent on the average American family vacation increase from 1970 to 1985?

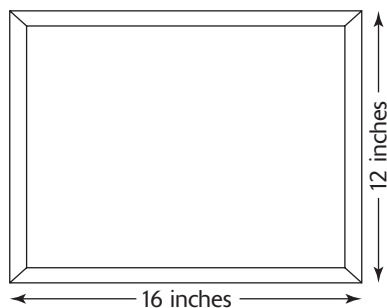
- (1) \$ 5.25
- (2) \$ 6.50
- (3) \$ 65.00
- (4) \$525.00
- (5) \$650.00



Questions 9 and 10 refer to the following information.

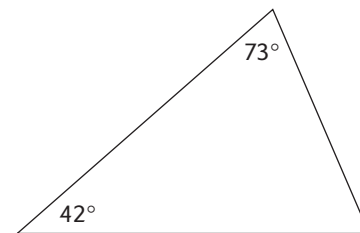
A group of 8 scouts has fourteen days to collect 301 pounds of newspapers for a paper drive. The scouts who collect more than 50 pounds will receive a purple badge, and the scouts who collect 50 pounds or less will receive a green badge.

9. How many purple badges did the group of scouts receive?
- (1) 50
  - (2) 14
  - (3) 8
  - (4) 6
  - (5) Not enough information is given.
10. What is the minimum average number of pounds of newspapers per day that the group must collect in order to have 301 pounds of newspapers in fourteen days?
- (1) 13.7
  - (2) 21.5
  - (3) 37.6
  - (4) 42.8
  - (5) 50.1
11. Sonya is building a picture frame, as shown below, as a gift for her aunt and uncle.



To make sure that the corners meet squarely, Sonya must check the diagonals of the frame. If the diagonals are equal, then the corners meet squarely (are square). What should the length (in inches) of each diagonal be so that Sonya can be sure that the corners are square?

- (1) 18
  - (2) 20
  - (3) 22
  - (4) 24
  - (5) Not enough information is given.
12. The triangle below has three interior angles. The measure of one is  $73^\circ$ , and the measure of another is  $42^\circ$ .



What is the measure (in degrees) of the third interior angle?

**PLEASE DO NOT WRITE IN THIS TEST BOOKLET.**

Mark your answer in the circles in the grid on your answer sheet.

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- 13.** It takes 2 pounds of chocolate chips to make 6 dozen cookies. Delta needs to make 27 dozen cookies. How many pounds of chocolate chips will Delta need?

**PLEASE DO NOT WRITE IN THIS TEST BOOKLET.**

Mark your answer in the circles in the grid on your answer sheet.

- 14.** Luke went to the store and bought celery priced at \$.29, lettuce priced at \$.69, a chicken priced at \$2.68, and dish soap priced at \$1.50. There is no tax on food items. Nonfood items are taxed at 6%. What was Luke's total bill?

- (1) \$5.47
- (2) \$5.25
- (3) \$5.16
- (4) \$3.66
- (5) \$1.50

- 15.** Marie is collecting information for a research project for her economics class at school, so she interviews her seven favorite teachers. Marie finds that their annual incomes, are as follows:

\$25,000  
\$17,000  
\$20,000  
\$25,000  
\$27,000  
\$21,000  
\$22,000

What is their median income?

- (1) \$17,000
- (2) \$22,000
- (3) \$23,000
- (4) \$24,000
- (5) \$27,000

- 16.** The chart below shows a comparison of bachelor's degrees earned from the years 1970 to 2000 by females and by males.

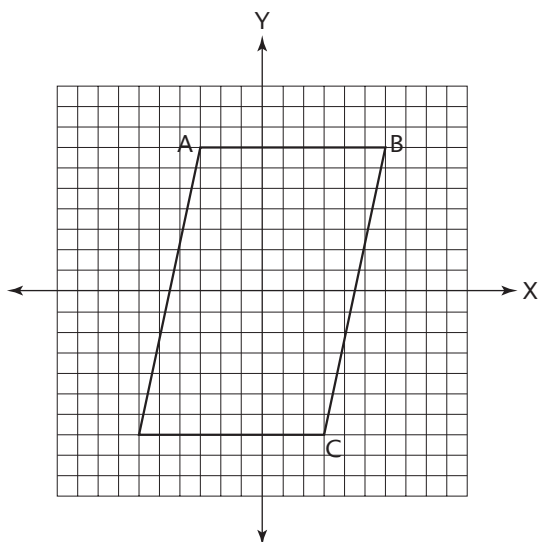
**Bachelor's Degrees Earned (in Thousands)**

	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>
Females	310	450	550	660
Males	460	480	490	520

According to the chart, in the years that females earned a greater number of degrees than males, how many more total degrees did they earn?

- (1) 60,000
- (2) 140,000
- (3) 200,000
- (4) 490,000
- (5) 520,000

17. Three vertices of parallelogram ABCD are shown in the graph below.

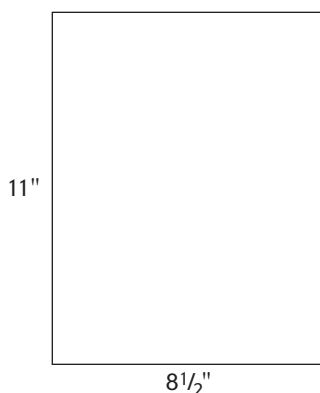


What is the location of point D, the fourth vertex of the parallelogram?

**DO NOT MARK YOUR ANSWER ON THE GRAPH ABOVE.**

Mark your answer on the coordinate plane grid on your answer sheet.

18. The diagram below shows the dimensions of a piece of paper.



What is the radius (in inches) of the largest circle that can be drawn on the piece of paper?

- (1) 11  
 (2)  $8\frac{1}{2}$   
 (3)  $5\frac{1}{2}$   
 (4)  $4\frac{1}{4}$   
 (5)  $2\frac{3}{4}$
19. Randy owns and manages Randy's Steakhouse. He needs to buy the following meats in order to have enough for the weekend business: 9 pounds of top sirloin, 8 pounds of filet mignon, and 7 pounds of London broil.

Randy orders his meat using the price list below.

**Price List**

Top Sirloin . . . . .	\$2.99 per pound or 2 pounds for \$5.00
Filet Mignon . . . . .	\$4.00 per pound
London Broil . . . . .	\$1.79 per pound or 3 pounds for \$5.00

What is the **LEAST** amount Randy can spend to buy the meat he needs for the weekend business?

- (1) \$97.00  
 (2) \$71.44  
 (3) \$66.78  
 (4) \$54.99  
 (5) \$34.78

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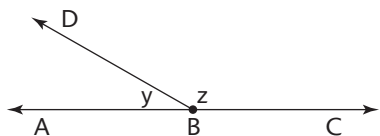
- 20.** Due to a slowdown at the lumber mill, the wages of all employees will be reduced by 10%. Before the slowdown, Jason was making \$321 per week. What will Jason's new approximate wage be?

- (1) \$310
- (2) \$290
- (3) \$190
- (4) \$160
- (5) \$ 30

Question 21 refers to the following diagram.

- 21.** The following statements about the diagram below are true:

- Angle  $ABC$  is a straight angle.
- The measure of angle  $z$  is 5 times that of angle  $y$ .



What is the degree measure of angle  $z$ ?

**PLEASE DO NOT WRITE IN THIS TEST BOOKLET.**

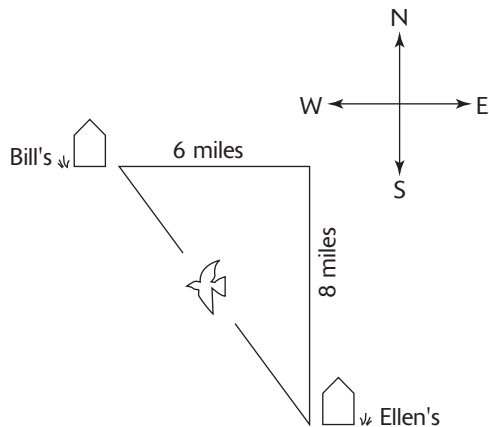
Mark your answer in the circles in the grid on your answer sheet.

- 22.** Mrs. Schmidt bought an assortment of cookies for the tenants' meeting in her apartment house. The assortment consisted of 6 dozen cookies, some chocolate and some vanilla. There were twice as many chocolate cookies as there were vanilla cookies. How many chocolate cookies were in the assortment?

**PLEASE DO NOT WRITE IN THIS TEST BOOKLET.**

Mark your answer in the circles in the grid on your answer sheet.

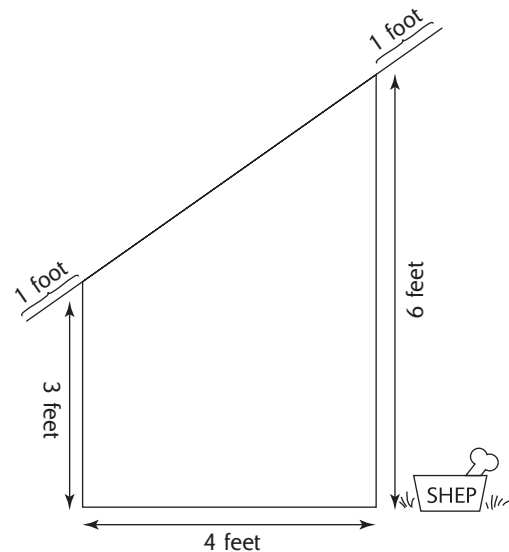
- 23.** Ellen can get to Bill's house by driving 8 miles north, then 6 miles west. Tomorrow is Bill's birthday, and Ellen plans to send a birthday greeting by way of a messenger pigeon, as shown on the map below.



If the messenger pigeon flies directly from Ellen's house to Bill's house, how many miles will the messenger pigeon fly?

- (1) 7
  - (2) 8
  - (3) 9
  - (4) 10
  - (5) 12
- 24.** Which of the following expresses 269,753 in scientific notation?
- (1)  $2.69753 \times 10^5$
  - (2)  $2.69753 \times 10^6$
  - (3)  $26.9753 \times 10^6$
  - (4)  $269.753 \times 10^5$
  - (5)  $2697.53 \times 10^3$

- 25.** The picture below is a side view of the doghouse that Wendy is building for her dog Shep. She has it completely built except for the roof.



What is the entire length of the roof (in feet) if it is to have a 1-foot overhang in the front and in the back?

- (1) 5
- (2) 6
- (3) 7
- (4) 8
- (5) 9

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT WORK ON ANY OTHER SECTION IN THE TEST.

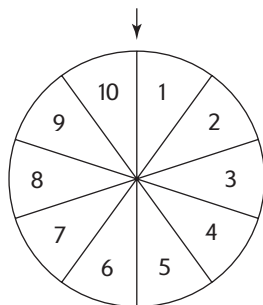


## Mathematics (45 mins., 25 ques.)

### PART II

*Directions: You will have 45 minutes to complete questions 26–50. You may **NOT** use a calculator with these questions. Choose the one best answer to each question.*

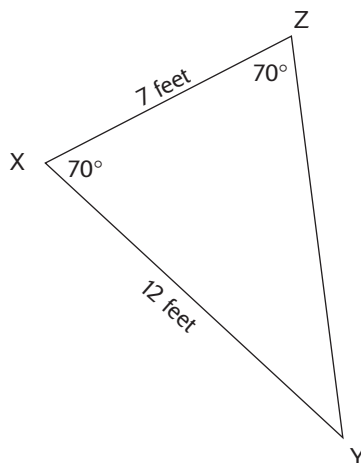
- 26.** The spinner shown below is divided evenly into 10 sections.



What is the probability of getting an even number on the first spin?

- (1)  $7/10$
  - (2)  $3/5$
  - (3)  $1/2$
  - (4)  $1/4$
  - (5)  $1/10$
- 27.** Jamal is organizing his high school reunion. He needs to make 500 phone calls and averages about 25 calls per day. If he begins phoning on June 1, when would he be expected to be finished?
- (1) June 5
  - (2) June 10
  - (3) June 15
  - (4) June 20
  - (5) June 25

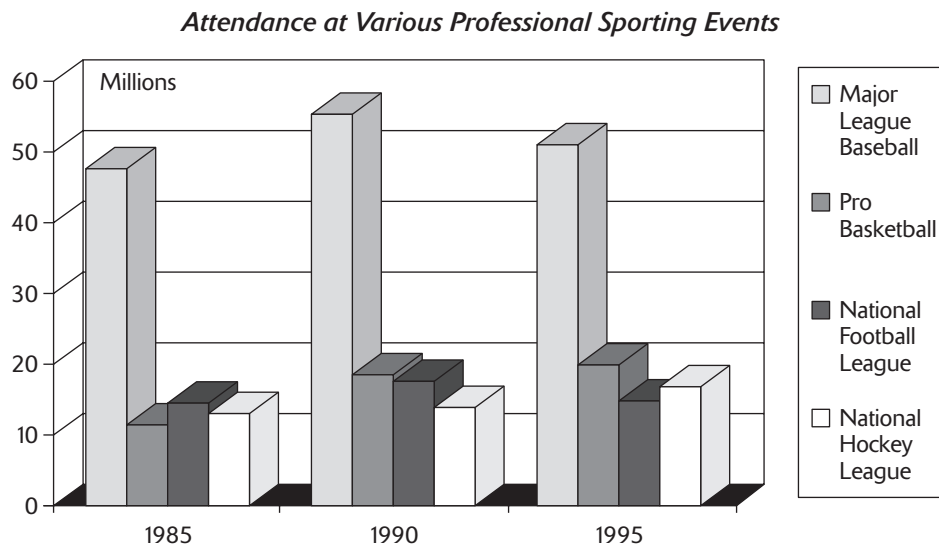
- 28.** Triangle XYZ is an isosceles triangle. Angles X and Z are each  $70^\circ$ .



What is the perimeter (in feet) of triangle XYZ?

- (1) 19
- (2) 21
- (3) 26
- (4) 31
- (5) Not enough information is given.

Questions 29 and 30 refer to the following graph, which shows the attendance (spectators) at various professional sporting events.



29. According to the graph, in 1990 the sport with the **LEAST** attendance had approximately how many spectators?

- (1) 15,000
- (2) 10,000,000
- (3) 15,000,000
- (4) 19,000,000
- (5) 25,000,000

30. What is the approximate **DIFFERENCE** in attendance in 1985 between the sport that had the greatest attendance and the sport that had the least attendance?

- (1) 47 million
- (2) 38 million
- (3) 29 million
- (4) 20 million
- (5) 10 million

31. Sam has four brothers — Tom, Joe, Chet, and Al. Tom and Joe are twins. Al is 5 years younger than Chet, and Chet is 2 years older than Tom. How old will Joe be when Al is 21?

**PLEASE DO NOT WRITE IN THIS TEST BOOKLET.**

Mark your answer in the circles in the grid on your answer sheet.

32. Between which of the following pairs of numbers is the square root of 40?

- (1) 2 and 6
- (2) 6 and 7
- (3) 14 and 18
- (4) 18 and 22
- (5) 22 and 26

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- 33.** When Gary rides his bicycle, he burns 3.3 calories per minute. Last week Gary rode his bicycle 45 minutes on Monday, 30 minutes on Tuesday, 40 minutes on Wednesday, and 50 minutes on Thursday. Which of the following expressions best represents how many calories Gary burned riding his bicycle last week?

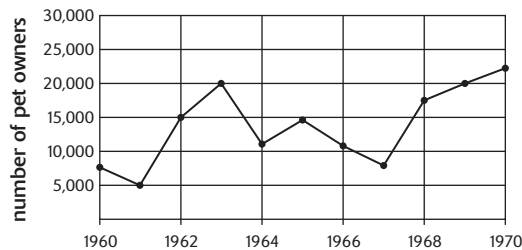
- (1)  $45 + 30 + 40 + 50$
- (2)  $165 + 3.3$
- (3)  $165(3.3)$
- (4)  $330(3.3)$
- (5)  $330 + 3.3$

- 34.** Lawrence and Betty were watching a 105-minute movie on television when a terrible storm hit, cutting off all power. At the time the storm hit, Lawrence and Betty had been watching the movie for  $\frac{1}{4}$  hour. What fraction of the movie had they seen?

- (1)  $\frac{1}{105}$
- (2)  $\frac{1}{7}$
- (3)  $\frac{1}{5}$
- (4)  $\frac{1}{4}$
- (5)  $\frac{1}{3}$

Questions 35 and 36 refer to the following graph.

Number of Pet Owners in Los Angeles Who Register Their Pets with the Department of Animal Registration



- 35.** What is the approximate difference between the number of pet owners who registered their pets in 1967 and the number who registered their pets in 1970?

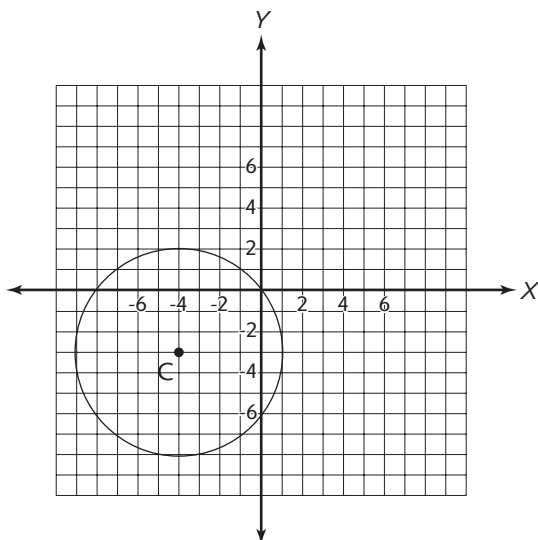
- (1) 1,700
- (2) 7,500
- (3) 8,000
- (4) 15,000
- (5) 22,500

- 36.** What is the percent increase in pet owners who registered their pets from 1962 to 1963?

- (1) 75%
- (2)  $66\frac{2}{3}\%$
- (3)  $33\frac{1}{3}\%$
- (4) 25%
- (5) 18%



37. The coordinate plane grid shows the graph of a circle.

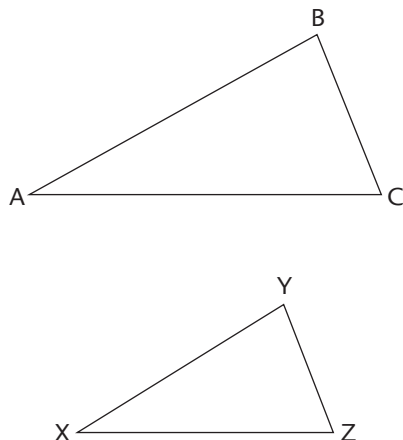


What is the location of point C, which is the center of the circle?

**DO NOT MARK YOUR ANSWER ON THE GRAPH ABOVE.**

Mark your answer on the coordinate grid on your answer sheet.

38. In the figure below, triangle ABC is similar to triangle XYZ. The perimeter of triangle ABC is 14 inches, and the perimeter of triangle XYZ is 8 inches.

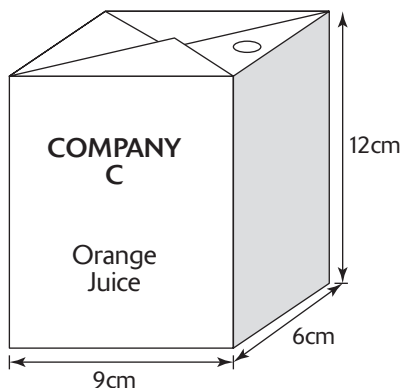


What is the length of side AB (in inches)?

- (1) 4  
(2) 6  
(3) 7  
(4) 14  
(5) Not enough information is given.
39. Mr. Spears baked cookies on Thursday. He baked the following assortment: 3 dozen chocolate chip cookies, 2 dozen oatmeal cookies, and 4 dozen peanut butter cookies. After all the cookies were cool, Mr. Spears mixed them up and put them in his grandmother's big ceramic cookie jar. His youngest son, who is not yet tall enough to look into the jar, took the first cookie. What was the probability that it was oatmeal?
- (1)  $\frac{1}{12}$   
(2)  $\frac{1}{4}$   
(3)  $\frac{2}{9}$   
(4)  $\frac{2}{7}$   
(5)  $\frac{2}{3}$

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40. The picture below is of the new rectangular package Company C is considering for its orange juice.



Because of the structure of the package, it can be filled to only  $\frac{3}{4}$  of its capacity without bursting. Given the package's dimensions, which of the following expressions represents the maximum volume (in cubic centimeters) of orange juice that the package can hold without bursting?

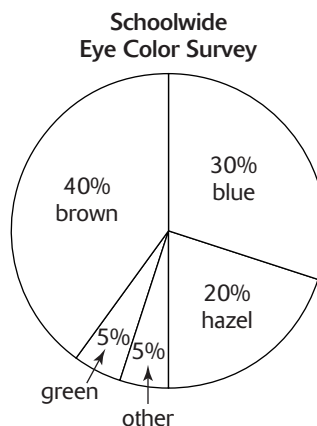
- (1)  $(9)(6)(12)$   
 (2)  $(\frac{3}{4})(9)(6)(12)$   
 (3)  $(\frac{3}{4})(6)(12 + 9)$   
 (4)  $2(6) + 2(12) + 2(9)$   
 (5)  $(2)(\frac{3}{4})(6 + 12 + 9)$
41. The perimeter of Leroy's rectangular yard is 600 feet. The yard's length is 50 feet more than its width. What is the width (in feet) of Leroy's yard?

- (1) 100  
 (2) 125  
 (3) 225  
 (4) 250  
 (5) 300

42. This year Tina's father is 39 years old. He is triple her age. Which equation could be used to determine Tina's age?

- (1)  $39 = 3T$   
 (2)  $39 = 3 + T$   
 (3)  $39 = T - 3$   
 (4)  $39 = T/3$   
 (5)  $39 = 3/T$

43. Annette does a schoolwide survey and publishes her results, as shown in the graph below.

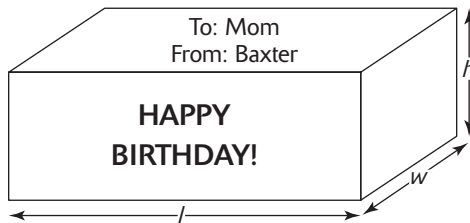


If 62 people at Annette's school have hazel eyes, how many have brown eyes?

**PLEASE DO NOT WRITE IN THIS  
TEST BOOKLET.**

Mark your answer in the circles in the grid on your answer sheet.

44. Baxter is going to decorate the closed gift box shown below by gluing gold braid along each of the edges.



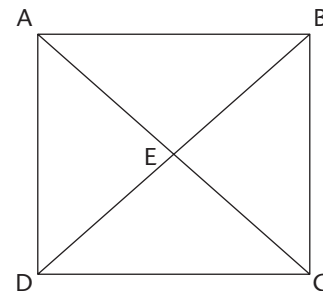
If the dimensions of the box are  $l$  by  $w$  by  $h$ , which equation could be used to determine the amount of braid ( $B$ ) that Baxter will need?

- (1)  $B = 4(lwh)$
  - (2)  $B = 4l + 4w + 4h$
  - (3)  $B = 2l + 2w + 2h$
  - (4)  $B = 2(lwh)$
  - (5)  $B = 3(l + w + h)$
45. The O'Brien family takes the local paper every day. It costs 25¢ each weekday, 50¢ on Saturday, and 75¢ on Sunday. The O'Brien family always pays in advance. This month they are going on vacation from Wednesday the 8th through Monday the 20th and will not be receiving the paper those days. If they were to receive a full refund, how much would it be?
- (1) \$5.00
  - (2) \$4.75
  - (3) \$4.50
  - (4) \$4.25
  - (5) \$4.00

46. Andre is fighting the battle of the bulge. He is counting calories consumed and calories burned. Today, Andre consumed 250 calories from fruits and vegetables, 500 calories from meat, 125 calories from cereals, and 275 calories from dairy products. Andre burned 980 calories today. Which expression could be used to express his net calorie count for the day?

- (1)  $250 + 500 + 125 + 275 - 980$
- (2)  $980 - 250 - 500 - 125 - 275$
- (3)  $250 + 500 - 125 - 275 + 980$
- (4)  $250 - 500 + 125 + 275 - 980$
- (5)  $250 + 500 + 125 + 275 + 980$

47. In the diagram below, AC and BD are diagonals of square ABCD. Point E is the where the two diagonals intersect.

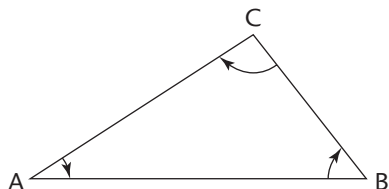


Which of the following **MUST** be true?

- (1) The measure of angle ADE equals the measure of angle DEC.
- (2) The measure of segment BD equals the measure of segment BC.
- (3) Segment AC is parallel to segment AD.
- (4) The measure of angle AEB equals the measure of angle ADC.
- (5) Segment BE is perpendicular to segment DC.

GO ON TO THE NEXT PAGE

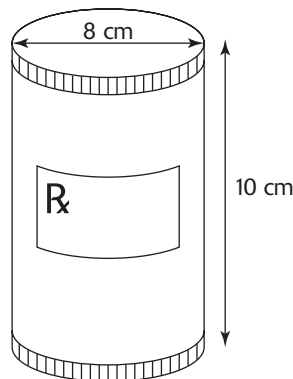
- 48.** The triangle below contains three interior angles. The second angle is double the first, and the third angle is triple the first.



What are the degree measures of the angles?

- (1) 10, 20, and 30
  - (2) 20, 40, and 60
  - (3) 30, 60, and 90
  - (4) 40, 80, and 120
  - (5) 60, 120, and 180
- 49.** Hal was doing such a good job as a day care instructor that he was offered an 18% raise. If Hal's yearly salary before the raise was \$14,000, which expression could be used to represent his new salary?
- (1)  $.18(\$14,000)$
  - (2)  $\$14,000 \div .18$
  - (3)  $\$14,000 + .18(\$14,000)$
  - (4)  $\$14,000 - .18(\$14,000)$
  - (5)  $\$14,000 + (\$14,000 \div .18)$

- 50.** Jorge works as a pharmacist. A customer purchases the cylindrical container of medication shown in the picture below.



Which of the following expressions could be used to calculate the maximum volume (in cubic centimeters) that this container can hold?

- (1)  $\pi(8^2)(10)$
- (2)  $\pi(4^2)(10)$
- (3)  $2\pi(8)(10)$
- (4)  $2\pi(4)(10)$
- (5) Not enough information is given.

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT WORK ON ANY OTHER SECTION IN THE TEST.



# Scoring and Explanations for Practice Test 2

## SCORING PRACTICE TEST 2

Score your GED Practice Examination 2 by following these steps:

1. Check the answers you marked on your answer sheet against the Answer Key that follows. Put a check mark in the box following any wrong answer.
2. Fill out the Scoring Chart (p. 483).
3. Estimate your score on each test using the Score Approximators (p. 484–486). Remember, these Score Approximators will give you a **very general** idea of how you are doing.
4. Read all the explanations (pp. 487–511). Go back to review any explanations that are not clear to you.
5. Finally, fill out the Reasons for Mistakes chart on p. 487.

Don't leave out any of these steps. They are very important in learning to do your best on the GED.

## Answer Key For Practice Test 2

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### LANGUAGE ARTS, WRITING

- |                                  |                                  |                                  |                                  |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 1. (5) <input type="checkbox"/>  | 14. (3) <input type="checkbox"/> | 27. (5) <input type="checkbox"/> | 40. (5) <input type="checkbox"/> |
| 2. (5) <input type="checkbox"/>  | 15. (5) <input type="checkbox"/> | 28. (3) <input type="checkbox"/> | 41. (4) <input type="checkbox"/> |
| 3. (3) <input type="checkbox"/>  | 16. (1) <input type="checkbox"/> | 29. (3) <input type="checkbox"/> | 42. (1) <input type="checkbox"/> |
| 4. (4) <input type="checkbox"/>  | 17. (4) <input type="checkbox"/> | 30. (5) <input type="checkbox"/> | 43. (1) <input type="checkbox"/> |
| 5. (4) <input type="checkbox"/>  | 18. (2) <input type="checkbox"/> | 31. (1) <input type="checkbox"/> | 44. (3) <input type="checkbox"/> |
| 6. (4) <input type="checkbox"/>  | 19. (3) <input type="checkbox"/> | 32. (4) <input type="checkbox"/> | 45. (2) <input type="checkbox"/> |
| 7. (4) <input type="checkbox"/>  | 20. (5) <input type="checkbox"/> | 33. (2) <input type="checkbox"/> | 46. (4) <input type="checkbox"/> |
| 8. (1) <input type="checkbox"/>  | 21. (3) <input type="checkbox"/> | 34. (3) <input type="checkbox"/> | 47. (4) <input type="checkbox"/> |
| 9. (5) <input type="checkbox"/>  | 22. (4) <input type="checkbox"/> | 35. (2) <input type="checkbox"/> | 48. (5) <input type="checkbox"/> |
| 10. (4) <input type="checkbox"/> | 23. (5) <input type="checkbox"/> | 36. (4) <input type="checkbox"/> | 49. (3) <input type="checkbox"/> |
| 11. (1) <input type="checkbox"/> | 24. (3) <input type="checkbox"/> | 37. (2) <input type="checkbox"/> | 50. (2) <input type="checkbox"/> |
| 12. (5) <input type="checkbox"/> | 25. (4) <input type="checkbox"/> | 38. (3) <input type="checkbox"/> |                                  |
| 13. (2) <input type="checkbox"/> | 26. (4) <input type="checkbox"/> | 39. (2) <input type="checkbox"/> |                                  |

**SOCIAL STUDIES**

- |                                  |                                  |                                  |                                  |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 1. (2) <input type="checkbox"/>  | 14. (2) <input type="checkbox"/> | 27. (2) <input type="checkbox"/> | 40. (1) <input type="checkbox"/> |
| 2. (2) <input type="checkbox"/>  | 15. (3) <input type="checkbox"/> | 28. (4) <input type="checkbox"/> | 41. (2) <input type="checkbox"/> |
| 3. (1) <input type="checkbox"/>  | 16. (5) <input type="checkbox"/> | 29. (4) <input type="checkbox"/> | 42. (1) <input type="checkbox"/> |
| 4. (5) <input type="checkbox"/>  | 17. (1) <input type="checkbox"/> | 30. (3) <input type="checkbox"/> | 43. (1) <input type="checkbox"/> |
| 5. (3) <input type="checkbox"/>  | 18. (4) <input type="checkbox"/> | 31. (5) <input type="checkbox"/> | 44. (2) <input type="checkbox"/> |
| 6. (3) <input type="checkbox"/>  | 19. (2) <input type="checkbox"/> | 32. (2) <input type="checkbox"/> | 45. (1) <input type="checkbox"/> |
| 7. (1) <input type="checkbox"/>  | 20. (1) <input type="checkbox"/> | 33. (3) <input type="checkbox"/> | 46. (2) <input type="checkbox"/> |
| 8. (2) <input type="checkbox"/>  | 21. (2) <input type="checkbox"/> | 34. (1) <input type="checkbox"/> | 47. (5) <input type="checkbox"/> |
| 9. (1) <input type="checkbox"/>  | 22. (3) <input type="checkbox"/> | 35. (3) <input type="checkbox"/> | 48. (3) <input type="checkbox"/> |
| 10. (1) <input type="checkbox"/> | 23. (5) <input type="checkbox"/> | 36. (5) <input type="checkbox"/> | 49. (4) <input type="checkbox"/> |
| 11. (2) <input type="checkbox"/> | 24. (3) <input type="checkbox"/> | 37. (3) <input type="checkbox"/> | 50. (2) <input type="checkbox"/> |
| 12. (4) <input type="checkbox"/> | 25. (2) <input type="checkbox"/> | 38. (1) <input type="checkbox"/> |                                  |
| 13. (2) <input type="checkbox"/> | 26. (4) <input type="checkbox"/> | 39. (1) <input type="checkbox"/> |                                  |

**SCIENCE**

- |                                  |                                  |                                  |                                  |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 1. (3) <input type="checkbox"/>  | 14. (5) <input type="checkbox"/> | 27. (1) <input type="checkbox"/> | 40. (5) <input type="checkbox"/> |
| 2. (2) <input type="checkbox"/>  | 15. (2) <input type="checkbox"/> | 28. (2) <input type="checkbox"/> | 41. (1) <input type="checkbox"/> |
| 3. (5) <input type="checkbox"/>  | 16. (1) <input type="checkbox"/> | 29. (1) <input type="checkbox"/> | 42. (2) <input type="checkbox"/> |
| 4. (3) <input type="checkbox"/>  | 17. (4) <input type="checkbox"/> | 30. (5) <input type="checkbox"/> | 43. (2) <input type="checkbox"/> |
| 5. (2) <input type="checkbox"/>  | 18. (2) <input type="checkbox"/> | 31. (2) <input type="checkbox"/> | 44. (3) <input type="checkbox"/> |
| 6. (4) <input type="checkbox"/>  | 19. (4) <input type="checkbox"/> | 32. (3) <input type="checkbox"/> | 45. (3) <input type="checkbox"/> |
| 7. (3) <input type="checkbox"/>  | 20. (4) <input type="checkbox"/> | 33. (1) <input type="checkbox"/> | 46. (1) <input type="checkbox"/> |
| 8. (1) <input type="checkbox"/>  | 21. (1) <input type="checkbox"/> | 34. (2) <input type="checkbox"/> | 47. (5) <input type="checkbox"/> |
| 9. (4) <input type="checkbox"/>  | 22. (4) <input type="checkbox"/> | 35. (4) <input type="checkbox"/> | 48. (4) <input type="checkbox"/> |
| 10. (5) <input type="checkbox"/> | 23. (5) <input type="checkbox"/> | 36. (3) <input type="checkbox"/> | 49. (2) <input type="checkbox"/> |
| 11. (3) <input type="checkbox"/> | 24. (5) <input type="checkbox"/> | 37. (1) <input type="checkbox"/> | 50. (5) <input type="checkbox"/> |
| 12. (2) <input type="checkbox"/> | 25. (4) <input type="checkbox"/> | 38. (2) <input type="checkbox"/> |                                  |
| 13. (1) <input type="checkbox"/> | 26. (4) <input type="checkbox"/> | 39. (3) <input type="checkbox"/> |                                  |

**LANGUAGE ARTS, READING**

- |                                 |                                 |                                  |                                  |
|---------------------------------|---------------------------------|----------------------------------|----------------------------------|
| 1. (1) <input type="checkbox"/> | 5. (5) <input type="checkbox"/> | 9. (4) <input type="checkbox"/>  | 13. (1) <input type="checkbox"/> |
| 2. (2) <input type="checkbox"/> | 6. (2) <input type="checkbox"/> | 10. (1) <input type="checkbox"/> | 14. (2) <input type="checkbox"/> |
| 3. (4) <input type="checkbox"/> | 7. (1) <input type="checkbox"/> | 11. (5) <input type="checkbox"/> | 15. (4) <input type="checkbox"/> |
| 4. (1) <input type="checkbox"/> | 8. (3) <input type="checkbox"/> | 12. (3) <input type="checkbox"/> | 16. (5) <input type="checkbox"/> |

- |                                  |                                  |                                  |                                  |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 17. (4) <input type="checkbox"/> | 23. (4) <input type="checkbox"/> | 29. (2) <input type="checkbox"/> | 35. (3) <input type="checkbox"/> |
| 18. (1) <input type="checkbox"/> | 24. (3) <input type="checkbox"/> | 30. (2) <input type="checkbox"/> | 36. (1) <input type="checkbox"/> |
| 19. (3) <input type="checkbox"/> | 25. (1) <input type="checkbox"/> | 31. (4) <input type="checkbox"/> | 37. (4) <input type="checkbox"/> |
| 20. (4) <input type="checkbox"/> | 26. (5) <input type="checkbox"/> | 32. (1) <input type="checkbox"/> | 38. (5) <input type="checkbox"/> |
| 21. (5) <input type="checkbox"/> | 27. (3) <input type="checkbox"/> | 33. (5) <input type="checkbox"/> | 39. (1) <input type="checkbox"/> |
| 22. (2) <input type="checkbox"/> | 28. (1) <input type="checkbox"/> | 34. (3) <input type="checkbox"/> | 40. (4) <input type="checkbox"/> |

## MATHEMATICS

- |   |                                      |                                       |                                  |
|---|--------------------------------------|---------------------------------------|----------------------------------|
| 1. (4) <input type="checkbox"/>         | 14. (2) <input type="checkbox"/>     | 27. (4) <input type="checkbox"/>      | 40. (2) <input type="checkbox"/> |
| 2. (4) <input type="checkbox"/>         | 15. (2) <input type="checkbox"/>     | 28. (4) <input type="checkbox"/>      | 41. (2) <input type="checkbox"/> |
| 3. (4) <input type="checkbox"/>         | 16. (3) <input type="checkbox"/>     | 29. (3) <input type="checkbox"/>      | 42. (1) <input type="checkbox"/> |
| 4. 152 <input type="checkbox"/>         | 17. (-6, 7) <input type="checkbox"/> | 30. (2) <input type="checkbox"/>      | 43. 124 <input type="checkbox"/> |
| 5. 6 <input type="checkbox"/>           | 18. (4) <input type="checkbox"/>     | 31. 24 <input type="checkbox"/>       | 44. (2) <input type="checkbox"/> |
| 6. (4) <input type="checkbox"/>         | 19. (3) <input type="checkbox"/>     | 32. (2) <input type="checkbox"/>      | 45. (2) <input type="checkbox"/> |
| 7. (3) <input type="checkbox"/>         | 20. (2) <input type="checkbox"/>     | 33. (3) <input type="checkbox"/>      | 46. (1) <input type="checkbox"/> |
| 8. (4) <input type="checkbox"/>         | 21. 150 <input type="checkbox"/>     | 34. (2) <input type="checkbox"/>      | 47. (4) <input type="checkbox"/> |
| 9. (5) <input type="checkbox"/>         | 22. 48 <input type="checkbox"/>      | 35. (2) <input type="checkbox"/>      | 48. (3) <input type="checkbox"/> |
| 10. (2) <input type="checkbox"/>        | 23. (4) <input type="checkbox"/>     | 36. (4) <input type="checkbox"/>      | 49. (3) <input type="checkbox"/> |
| 11. (2) <input type="checkbox"/>        | 24. (1) <input type="checkbox"/>     | 37. (-4, -3) <input type="checkbox"/> | 50. (2) <input type="checkbox"/> |
| 12. 65 degrees <input type="checkbox"/> | 25. (3) <input type="checkbox"/>     | 38. (5) <input type="checkbox"/>      |                                  |
| 13. 9 pounds <input type="checkbox"/>   | 26. (3) <input type="checkbox"/>     | 39. (3) <input type="checkbox"/>      |                                  |

## Scoring Chart

Use your marked Answer Key to fill in the following Scoring Chart.

	Possible	Completed	Right	Wrong
Language Arts, Writing, Part I	50			
Social Studies	50			
Science	50			
Language Arts, Reading	40			
Mathematics				
Part I	25			
Part II	25			
TOTAL	240			

Now, use this Scoring Chart to approximate your score on the following pages.

## Approximating Your Score

The following Score Approximators will help you evaluate your skills and give you a very *general* indication of your scoring potential.

### LANGUAGE ARTS, WRITING

To approximate your Language Arts, Writing score

1. Using the Scoring Chart, fill in the blank below with the number of questions you answered *correctly* on Part I: Multiple Choice.
2. Have an English teacher, tutor, or someone else with good writing skills read and evaluate your essay using the checklists given in Part 3, How to Start Reviewing. Have your reader evaluate the complete essay as *good*, *average*, or *marginal*. Note that your paper would actually be scored from 1 to 4 by two trained readers. But since we are trying only for a rough approximation, the simple *good*, *average*, or *marginal* evaluation will give you a general feeling for your score range.
3. Use the following table to get an approximate score. Notice that the left-hand column lists your approximate score range with a marginal essay, the middle column with an average essay, and the right hand-column with a good essay.

Right answers on Part I: \_\_\_\_\_

Essay evaluation:      Marginal      Average      Good

<b>Number of Right Answers On Part I: Multiple Choice</b>	<b>Approximate Score with Essay Evaluation Range</b>		
	<b>Marginal Essay</b>	<b>Average Essay</b>	<b>Good Essay</b>
1-10	220-350	260-420	380-510
12-20	360-380	430-450	520-540
22-30	390-410	460-480	550-560
32-40	410-450	480-520	570-600
42-50	460-640	530-710	620-800

Remember, this is only an *approximate score range*. When you take the GED Language Arts, Writing Test, some of the multiple-choice questions may be easier or more difficult. The essay will be scored accurately by trained readers.

### SOCIAL STUDIES

To approximate your Social Studies score

1. Using the Scoring Chart, fill in the blank below with the number of questions you answered *correctly*.
2. Use the following table to match the number of right answers and the approximate score range.



Right answers: \_\_\_\_\_

<b>Number of Right Answers</b>	<b>Approximate Score Range</b>
2–10	200–320
12–20	340–400
22–30	410–470
32–40	480–550
42–50	570–800

Remember, this is only an *approximate score range*. When you take the GED Social Studies Test, you will have questions that are similar to those in this book. Some questions, however, may be slightly easier or more difficult.

## SCIENCE

To approximate your Science score

1. Using the Scoring Chart, fill in the blank below with the number of questions you answered *correctly*.
2. Use the following table to match the number of right answers to the approximate score range.

Right answers: \_\_\_\_\_

<b>Number of Right Answers</b>	<b>Approximate Score Range</b>
2–10	200–320
12–20	340–380
22–30	390–430
32–40	450–540
42–50	570–800

Remember, this is only an *approximate score range*. When you take the GED Science Test, you will have questions that are similar to those in the book. Some questions, however, may be slightly easier or more difficult.

## LANGUAGE ARTS, READING

To approximate your Language Arts, Reading score

1. Using the Scoring Chart, fill in the blank below with number of questions you answered *correctly*.
2. Use the following table to match the number of right answers to the approximate score range.

Right answers: \_\_\_\_\_

<b><i>Number of Right Answers</i></b>	<b><i>Approximate Score Range</i></b>
2–10	200–320
12–20	340–400
22–30	410–480
32–40	500–800

Remember, this is only an *approximate score range*. When you take the GED Language Arts, Reading Test, you will have questions that are similar to those in this book. Some questions, however, may be slightly easier or more difficult.

## MATHEMATICS

To approximate your Mathematics score

1. Using the Scoring Chart, fill in the blank below with the number of questions you answered *correctly*.
2. Use the following table to match the number of right answers to the approximate score range.

Right answers: \_\_\_\_\_

<b><i>Number of Right Answers</i></b>	<b><i>Approximate Score Range</i></b>
2–10	200–330
12–20	350–400
22–30	410–470
32–40	480–540
42–50	540–800

Remember, this is only an *approximate score range*. When you take the GED Mathematics Test, you will have questions that are similar to those in this book. Some questions, however, may be slightly easier or more difficult.

## REASONS FOR MISTAKES

Fill out the following chart *only after you have read all the explanations that follow*. This chart will help you spot your strengths and weaknesses and your repeated errors or trends in types of errors.

	<b><i>Total Missed</i></b>	<b><i>Simple Mistake</i></b>	<b><i>Misread Problem</i></b>	<b><i>Lack of Knowledge</i></b>
Language Arts, Writing Part I				
Social Studies				
Science				
Language Arts, Reading				
Mathematics				
Part I				
Part II				
TOTALS				

Examine your results carefully. Reviewing the above information will help you pinpoint your common mistakes. Focus on avoiding your most common mistakes as you practice. If you are missing a lot of questions because of “Lack of Knowledge,” you should go back and review the basics.

## Explanations, Practice Test 2

### LANGUAGE ARTS, WRITING

- (5)** Use the adverb, *increasingly*, to modify the adjective, *popular*.
- (5)** The sentence is correct as written.
- (3)** The correct, shortest, and clearest version of the sentence would replace *you could invest in* with the single word *including*. The punctuation in **(2)** isn’t wrong (the semicolon can separate the two sentences), but this choice is no real improvement on the original and isn’t the most effective combination.
- (4)** The word *fund* is singular. You can be sure it is meant to be singular because of the word *that*. If the writer meant the word to be plural, *those* would be used instead of *that*. You must also notice in this question that the word *fund* should be possessive. In other words, the *securities* belong to the fund. So, to make the possessive of a singular word, add *’s* to create *fund’s* **(4)**. The plural verb *are* is right because it refers to *securities*, which is plural.
- (4)** The sentence can be corrected either by changing the comma after *industry* to a semicolon (a punctuation mark that can separate two complete sentences) or by adding the conjunction *but* and keeping the comma. Remember, a semicolon is correct between two sentences that are not joined by a conjunction (such as *and*, *but*, and *so*). A comma is correct between two sentences that *are* joined by a conjunction. In other words, both of the following sentences are correct: “Rebecca is my sister; she plays the flute” and “Rebecca is my sister, and she plays the flute.” However, the following is incorrect: “Rebecca is my sister; and she plays the flute.”
- (4)** The paragraph and the first part of this sentence use the second-person pronoun (*you*, *your*). The second part of this sentence should also use *you*, not *one*.

7. (4) The best combination of the two sentences would use the main verb of the second sentence: “One popular type of fund, the money market mutual fund, may invest in a variety of securities.”
8. (1) *Like* is a preposition and takes an object. (“Like other people, you can . . .” This sentence is correct because the object of the preposition *like* is *other people*. “Like with a money market . . .” is not correct here because there is no object for *like*.) *As*, a conjunction, is necessary to introduce the prepositional phrase beginning with *with*.
9. (5) The sentence is correct as written.
10. (4) As in question 6, use the pronoun *you* because the rest of the paragraph uses *you*. The correct verb is *should*. *Should* suggests an obligation, something you ought to do. *Shall* is in the future tense and suggests that this is something that you will definitely do at some time.
11. (1) The plural *their* agrees in number with the word it refers to: the plural *funds*.
12. (5) With *either . . . or*, you should use as close to the same structure as possible after each of the two conjunctions. In answer (5), a noun (*brokers*) follows *either* and a noun (*corporations*) with two modifying words (*mutual fund*) follows *or*. None of the four other answers has the same structure after *either* and *or*.
- Choice (1) *either through/or mutual*
- Choice (2) *either through/or you*
- Choice (3) *either brokers/or through*
- Choice (4) *either through/or mutual*
13. (2) The subject of a sentence should not be separated from its verb by a comma. In this sentence, the subject is *city* and the verb is *has established*. So, the comma after *Fairville* should be removed.
14. (3) If you start with the prepositional phrase *On Monday and Friday*, of the choices given, the next word would have to be *refuse*. “On Monday and Friday, refuse in the southwest will be collected . . .”
15. (5) The sentence lacks a main verb, as the form *striving* is not complete. (It would have to be *is striving* to form a sentence.) Option (4) is also not complete. (It would have to be *has striven*.) The verb must be singular to agree with *city*, so (2) and (3) are incorrect.
16. (1) The subject of sentence 8 is the schedule for refuse pickup outside the city limits. Paragraph A deals with these schedules for all parts of the city, so the sentence giving this additional schedule logically belongs in paragraph A following the other schedules.
17. (4) Sentence 9 contains an incorrect verb tense, *has contracted*. You know the action took place in the past because of the phrase *Last month*, so the verb should be changed to the past tense, *contracted*.
18. (2) It’s clear that the recycling container itself should be marked “recycle,” but the placement of the phrase *marked “recycle”* after *regular trash* makes it seem as though the regular trash container should be marked “recycle.” To fix the problem, the phrase should be moved closer to *container*. Option (2) is also shorter than the original, leaving out the unnecessary phrase *from the regular trash*. Saying simply *separate container* is just as clear.

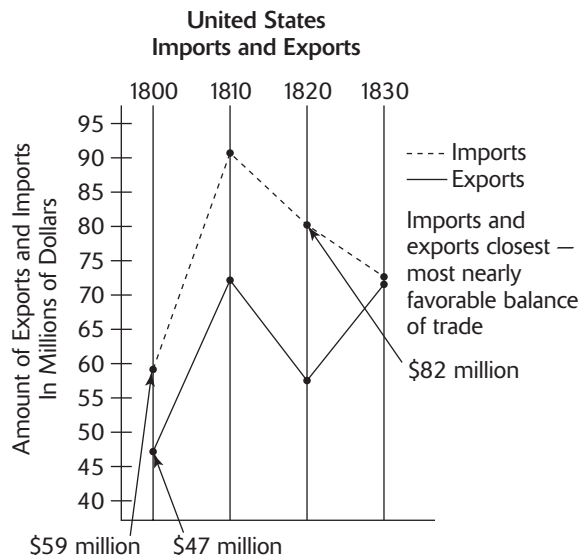
19. (3) The revised sentence would read as follows: “The city urges the citizens of Fairville to make note of these changes so there will be no disruption in their refuse collection.” The revision removes the unnecessary repetition of *Make note of them*. This phrase is also incorrect because it addresses the reader directly (with the understood *you* — *you make note of them*), while sentence 14 and the remainder of sentence 15 use *citizens* and *their*, respectively.
20. (5) Sentence 3 gives the reason you should take notes, so an effective combined sentence would read like this: “Because the bird will rarely sit still long enough for you to find it in your bird book, make quick notes. . . .”
21. (3) In sentence 6, two complete sentences with no conjunction between them are incorrectly joined by a comma. One way to solve this problem is to add the appropriate conjunction, in this case *but*. “. . . you may not be able to . . . , but you can compare. . . .”
22. (4) This sentence should say “there *are* always coloration and pattern” rather than “there *is* . . .” because the verb must agree with the plural *coloration and pattern*.
23. (5) The sentence is correct as written.
24. (3) There is no reason to have the *to be* in this sentence. It should simply be “Is its voice, or song, easily recognized . . .”
25. (4) Sentence 19 mentions *all these things*, referring to items in paragraphs B, C, and D. So, it should not be part of paragraph D and should, instead, begin a new paragraph.
26. (4) The possessive form of *they* is *their*. *They’re* means *they are*.
27. (5) Either *less* or *smaller* is better here than *lesser*. Options (3) and (4) leave out the needed comma, and the present tense verb in (3), *are*, is wrong because the sentence is speaking about something that may happen in the future.
28. (3) The passage uses the second person pronoun (*you*) throughout. The perfect tense *have worked* is necessary because the action of working will have been completed.
29. (3) The correct verb tense here is the future, *will receive*, because the sentence says that you are *approaching retirement age*. In other words, you are still working. So, you *will receive* the benefits in the future.
30. (5) The verbs in this sentence are correct, and the sentence is correct as written.
31. (1) Two commas are missing. The first comma is needed to separate parts of a series (*investments, . . . funds, . . . sources*). The second comma is needed to separate a dependent clause (*If . . . self-employment*) from the main clause of the sentence (*Your Social Security . . . affected*).
32. (4) Wherever the *however* is placed, it must be set off by a comma or commas. The correct pronoun is *they*, not *it*, because the word refers to the plural *benefits* in sentence 6.
33. (2) The correct verb form is the singular *exceeds*, to agree with the singular *income*.
34. (3) The word that makes sense here is *lose*, a verb meaning *to be deprived of*. *Loose* is an adjective meaning *unrestrained*.
35. (2) Sentence 10, as it stands, is not a complete sentence. The best option for combining it with sentence 9 is to change the period after *certain amount* to a comma and replace *An amount* with *which*, making the single sentence grammatically correct and avoiding the repetition of *amount*.

- 36. (4)** The topic of the whole selection is Social Security benefits and how they are affected by taking them at certain ages and by earning a certain amount of money while collecting them. Sentence 11, about earning additional money when you're young, is not on this topic and would best be removed.
- 37. (2)** *You're*, which means *you are*, is needed here because the clause must have a subject and verb ("If you are over seventy"). Since the paragraph uses the pronoun *you* throughout, there is no reason to change to *one*.
- 38. (3)** The phrase *for example* interrupts the rest of the sentence and should have commas both before and after it.
- 39. (2)** Paragraph A includes a series of questions in which all of the verbs except the one in sentence 3 are in the present tense (*Do, Are, Do*). So, the verb in sentence 3 would make the most sense in the present tense, *Are*, rather than the future tense, *Will*.
- 40. (5)** Sentence 6 provides a logical solution to the problems posed in the series of questions. If the reader of the letter has these problems, the letter suggests, then the magazine is for her. So, the sentence best fits immediately following the last of the four questions, after sentence 4.
- 41. (4)** *The magazine* in sentence 8 repeats information given by the name of the magazine, *Your Finances*, in sentence 7. The shortest and clearest way to give the information in one sentence is "*Your Finances* is for people with low to moderate incomes, not for the already wealthy."
- 42. (1)** The word *Since* should not be set off from the rest of the introductory phrase by a comma. The comma after *invest* (setting off the entire phrase from the main sentence) is correct.
- 43. (1)** Sentence 14 is an incomplete sentence (without a main verb). Removing the *Because* at the beginning of the sentence fixes that problem. The resulting sentence is grammatically correct, makes sense, and includes parallel verbs: *deal, choose, and get*.
- 44. (3)** The word *bill* is not a proper noun and should not be capitalized.
- 45. (2)** The original sentence 1 is not a complete sentence. To fix that problem, the comma and the *which* should be removed — "Entry forms may be obtained. . . ." It would be correct, but not necessary, to change *a.m.* to *in the morning*. If you did, however, you would also have to change *p.m.* to *in the afternoon* to be parallel.
- 46. (4)** While in some cases you could set off a phrase such as *for submission of entry blanks*, to do so correctly you would have to place a comma both at the beginning of the phrase and at the end. None of the options gives you this choice. The best correction to this sentence is to remove the comma — "Opening date for submission of entry blanks is July 15."
- 47. (4)** Sentence 10 is a sentence fragment. It is best combined with sentence 9 — "as a vegetable . . . rather than a fruit." The sentences all make sense and provide clear information in the order they appear, so there is no reason to move them or remove them.
- 48. (5)** The subject of the sentence is *classifications* (plural). The correct verb for this subject is *include* (also plural).

49. (3) The word *although* suggests that the fact that fruit and flowers are perishable is *not* a reason to bring them late in the period. But, in fact, that *is* the reason they should be brought later. The word that fits the sense here, then, is *because*.
50. (2) The revised sentence would read as follows: “Ribbon awards in each classification will be first (blue), second (red), and third (white).” Options (1), (3), and (5) unnecessarily repeat *award* (in *awarded*) or *ribbons*. The revision in option (4) would leave out a necessary verb.

## SOCIAL STUDIES

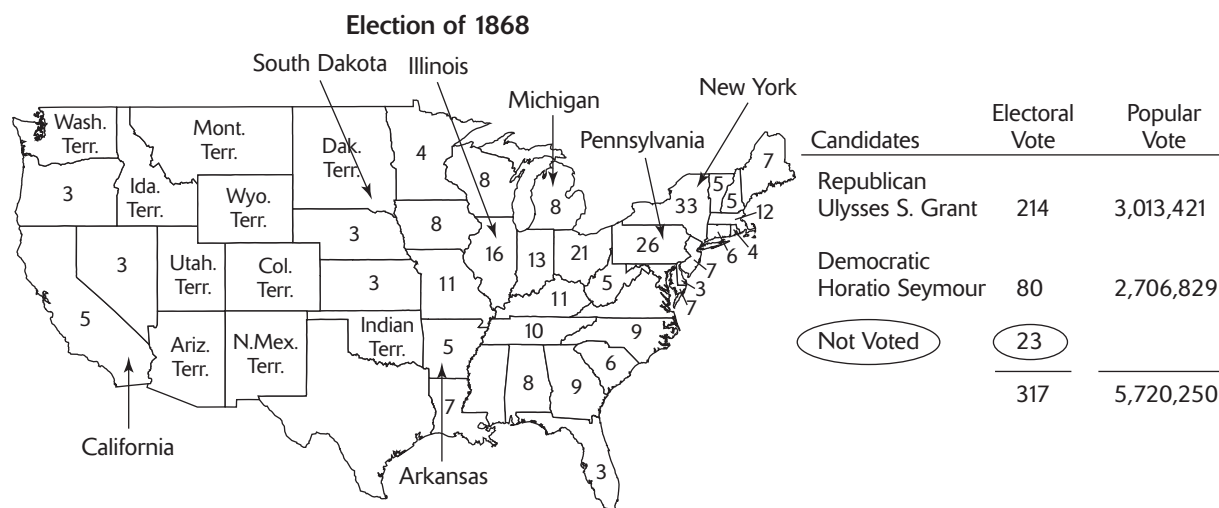
- (2) Jefferson does not supply proof for his statements; he declares they are facts.
- (2) The Constitution does not specifically list the powers of the President. This makes it possible for a strong President to utilize practice, precedent, and custom to develop his authority.
- (1) Married women were 31.9% of the labor force in 1960, a percentage that rose to 61.2% in 1996.
- (5) The border between Spain and France is entirely on land, ruling out choices (1) and (2). The Himalayas Mountains (3) are in India/Tibet, and the Iberian Peninsula (4) is the area that includes Spain and Portugal.
- (3) The Age of Enlightenment is also called the Age of Reason for its many advances in science, literature, and political philosophy.



- (3) In 1830, exports and imports were less than \$5 million apart.
- (1) A favorable balance of trade occurs when a country exports (sells outside the country) more than it imports (purchases from other countries). The balance is always unfavorable in these years, but in 1830 the exports are closest to the imports.
- (2) The import total is shown by the broken line on the graph. In 1820, it is about \$82 million.
- (1) In 1800, the export total is about \$47 million and the import total is about \$59 million. So, the United States exported about \$12 million less than it imported.



- 10. (1)** The chronometer is a type of clock that measures the time difference from the Greenwich prime meridian and the location of a ship. Because there are 24 hours in a day, and 360 degrees in a circle, knowing the difference in time enables a navigator to determine the number of degrees of longitude.
- 11. (2)** The writer argues that government has a responsibility to the governed to listen to complaints about mistakes.
- 12. (4)** The writer advocates a peaceful course of informing the government of the error and to “pray” (request) that action be taken to correct it.
- 13. (2)** Since the excerpt states that “But such measure does not dissolve the obligation between governors and the governed,” then there must be an obligation.



- 14. (2)** Arkansas is to the right of the Indian Territory and is shown with 5 electoral votes. Since it is shown as having electoral votes, it was a state in 1868.
- 15. (3)** New York had 33 electoral votes; Pennsylvania had 26; Illinois had 16; Michigan had 8; and California had 5.
- 16. (5)** The map reports 23 electoral votes were not voted. None of these other statements is true according to the map.
- 17. (1)** South Dakota is still a territory on this map.
- 18. (4)** Early explorers believed that a sea passage north of Canada was possible between the Atlantic and Pacific oceans. Choice (3) would be a “Northeast” passage and (5) a “Southwest” passage.
- 19. (2)** The first paragraph speaks of the threat of a lack of water to economic progress in the West.
- 20. (1)** A “skirmish” is a fight or encounter. The lawsuits between California and Arizona are examples of the contests over river flows.
- 21. (2)** The Catholic Church did not distinguish between natural law and religion, and Galileo’s theory went against the religious belief at the time.



- 22. (3)** A company operating solely within (*intra*) a state, in this case, New Hampshire, is intrastate commerce.
- 23. (5)** A state flower is an issue confined to a single state. All of the other choices have to do with issues that would concern several states and so would be a more likely concern of the United States Congress rather than a concern of a member of a state legislature.
- 24. (3)** The federal government would oversee transcontinental (across a continent) bus routes because they cross several state lines.
- 25. (2)** The Bolsheviks (later known as Communists) defeated their opposition in 1921 after a bitter civil war. Choice (4) is not relevant, and Lenin was a Marxist, so (5) is untrue.
- 26. (4)** In 1960, population density per square mile was 51, rising to 75 in 1996. Between 1940 and 1950, it declined slightly. The graph says nothing about immigration, the urban-rural movement, or the addition of new territory.
- 27. (2)** A small political party must capture a plurality (higher percentage) of the votes cast in a state to win the electoral votes. This is virtually impossible given the large membership in the major political parties, the Democrats and Republicans.
- 28. (4)** Farmers protested a lengthy decline in the price of agricultural products; they allied themselves with silver producers, who wanted the government to coin silver money, and formed the People's (Populist) party.
- 29. (4)** A second heavily populated area is in the Midwest and includes the cities of Cleveland, Chicago, Detroit, and many others. The other choices are sparsely populated areas.
- 30. (3)** New York is the country's largest city, and the largest in the Northeast corridor.
- 31. (5)** Since the megalopolis would include large cities, suburbs, and small cities, as well as at least seven different states, there would be hundreds of different political bodies, all with different needs and interests. It would be very difficult for so many different administrations to agree on policies.
- 32. (2)** Air pollution would not respect city or state boundary lines and would be a problem all the communities in the area would face. The other options are sometimes problems, but each can be handled by an individual city, town, or state.
- 33. (3)** In the decade of the 1960s, France, Great Britain, and Belgium granted independence to their colonies that occupied most of the land area of the African continent.
- 34. (1)** The average rate for utility bonds was about 10%.
- 35. (3)** November 1 is the perpendicular line that starts before the word "Nov," for November.
- 36. (5)** All of the long-term rates were at their lowest on January 31.
- 37. (3)** Lindbergh was the first person to fly this route nonstop alone in a single-engine aircraft. The feat made him an international hero. A bachelor at the time, he later married Anne Morrow.
- 38. (1)** After the Civil War, the 14th Amendment applied protection of civil liberties to citizens of states. The 5th Amendment had done this for protection from the national government but not the states.

- 39. (1)** In 1980, Japan produced about 11 million cars, and the U.S. produced fewer than 9 million cars. Europe produced more than 15 million cars.
- 40. (1)** The Radical Republicans imposed their reconstruction program on the South, but white Southerners believed it was vindictive and would not support it. With the Compromise of 1877 restoring full political power to the South, reconstruction ended.
- 41. (2)** The number of Democrats in the House of Representatives hovered at the 250 level from 1989 to 1993. Republicans gained a majority in 1995.
- 42. (1)** The information says that the economic record of the U.S. and industrialized countries of Europe were “roughly equal” in the mid-nineteenth century, and that the U.S. is expected to surpass the historical average in the mid-twentieth century.
- 43. (1)** The businessman is using the term “class warfare” as a way of justifying his selfish actions.
- 44. (2)** The Congress of Vienna expected to defeat Napoleon, who had placed his own supporters on European thrones. Victorious allies would also gain new territories as compensation for their efforts.
- 45. (4)** A surplus in agricultural production depresses prices; a federal subsidy to farmers to limit production helps farmers by keeping prices stabilized, a famous example of a federal subsidy program.
- 46. (2)** The First World War began as allies of Serbia and Austria-Hungary failed to resolve the controversy surrounding the assassination of Archduke Franz Ferdinand.
- 47. (5)** From a global perspective, the Napoleonic wars that lasted from about 1800 to 1815 put England and France in a major struggle for survival. U.S. claims for neutrality were important to the Americans, but the British were facing much larger issues.
- 48. (1)** The Russian, Mexican, and French Revolutions involved major social upheavals, and the U.S. War of Independence granted unprecedented liberty through adoption of the Bill of Rights. Latin America’s people mainly experienced a change in rulers but little social reform.
- 49. (4)** According to the information given, protecting and expanding America’s foreign trade based on its freedom of the seas was critical. Most of the passage discusses this issue.
- 50. (2)** Unlike authoritarian, traditional, or mixed systems, in an individualistic form of economic organization, people are free to choose the economic activity that is best for them.

## SCIENCE

- 1. (3)** The temperature of the soup stays the same. While the soup is boiling, both liquid and vapor are present in the covered kettle. The temperature of the liquid cannot be higher than the boiling point (212° Fahrenheit), and the temperature of the water vapor cannot be less than the boiling point. So, the soup stays at the boiling point.
- 2. (2)** If you look closely at the diagram, you can see that the closest atoms are sodium (+) and chlorine (–), and that is because unlike charges attract each other. The pattern of alternating sodium and chlorine atoms could be continued in any direction, so salt crystals could be any size. Choice (c) is not correct because the faces are squares.

3. (5) Because the oxygen passes into blood vessels, (2) and (4) must be wrong. The question states that the oxygen goes through the body wall, which is the “thin membrane” of Method E. A *membrane* is simply a sheet or layer.
4. (3) Because the trout gets its oxygen from water, (1) must be wrong. You should know that fishes have gills to take oxygen from water. Method C is the only choice that mentions gills.
5. (2) The question describes the respiration of beetles and never mentions any blood vessels, so (1), (3), and (5) are wrong. The “network of tiny tubes” in the question must be the same as the “system of air ducts” mentioned in Method B.
6. (4) This question also does not mention any blood vessels, so the answer is not (1), (3), or (5). You must choose between Method B, which mentions “a system of air ducts” and Method D, which mentions “diffusion through a moist surface,” since the internal parasites are moistened by body fluids of the host. So, choice (4) is best.
7. (3) The moss and the fern are the two most simple plants — they do not reproduce by seeds, so these should be the earliest plants to appear. The only choices that list the moss and fern first are choices (1) and (3). Of the two plants with seeds — the pine and the rose — the one with flowers is most advanced. The rose is listed last in choice (3) and (4). So, choice (3) must be right.
8. (1) The diagram shows that volume increases as temperature increases. This is called a *direct relationship*.
9. (4) When you look at any object in a mirror, the light rays from the object have been reflected off the mirror toward your eyes. Of the five processes, reflection best explains an image seen in a mirror.
10. (5) Weak tea is a very clear liquid, so you are able to see the spoon inside the cup. As light rays leave the air and enter the tea, they bend and travel at an angle to their original direction. This change in direction of light (refraction) causes the spoon to seem bent as it enters the tea.
11. (3) Shadows appear because light obeys the law of linear propagation. As light passes an object, it continues in a straight line and doesn’t bend behind the object. The dark zone where the light is blocked by the object is the shadow. Of course, shadows are dark only if there is a strong light coming from one source, like the sun.
12. (2) The heat from the wood burning in the fireplace enters the metal poker and puts energy into its atoms. That added energy escapes from the metal atoms by the process called *emission*. The light energy is emitted in only some colors. In the example, the hot poker gives off only red light.
13. (1) Sunlight is white light, being a mixture of all the simple colors of the spectrum: red, orange, yellow, green, blue, indigo, and violet. When sunlight falls on the apple, all the colors except red are absorbed by the skin of the fruit. The remaining red light can be reflected toward the eye of a person.
14. (5) The circulatory system is a double loop, and any blood must travel both loops before returning to its starting point. If you start at the lungs, where the blood picks up fresh oxygen, you’ll see that the blood goes to the left side of the heart, which pumps it out the arteries to the body tissues. The blood returns by the veins to the right side of the heart, which pumps the blood to the lungs, the original starting point.

- 15. (2)** The long molecules of rubber are kinked and twisted. When the band is pulled, the molecules straighten out. They return to their original shape upon release of the force. This property of returning to the original shape is called *elasticity*.
- 16. (1)** A hive-dwelling worker honey bee flies some distance searching for food, so it is *mobile*. It is usually found in large swarms, or groups, and depends on others for reproduction and new locations for food, so it is *colonial*.
- 17. (4)** The Earth gets hotter as you go downward from the surface, so marble formed deep within the Earth where the high temperatures could change limestone. Those deep rocks have been exposed at the surface by erosion over a long time. Usually such an area was slowly uplifted by Earth forces at the same time as the erosion was taking place.
- 18. (2)** Since the numbers in the chart are the number of *differences* between the hemoglobin of two animals, the most similar animals will have the *smallest* number on the chart. The zeros don't count because they are where a row and a column are the same animal. The smallest number for two animals is 13, the cow and the sheep.
- 19. (4)** Diamonds, water, and alcohol are all transparent and, like glass, would allow light to pass through them and bend (refract).
- 20. (4)** Light always bends, or refracts, when it slows down or speeds up. Light is slowed by the molecules in air, glass, or any transparent material.
- 21. (1)** Newton's classic experiment changed the world's understanding of light, showing that it is made up of various colors that can be separated by a prism into a spectrum. Choice **B** is Einstein's famous equation. Choice **C** is not true. The information beneath the figure says that prisms "bend [refract] light."
- 22. (4)** Mount Saint Helens in Washington exploded because its lava was rich in gas. It is rather like shaking a bottle of soda pop before opening it; the gases escape dramatically. On the other hand, the gas-poor lava of Hawaii simply oozes out of the volcano. Choices **(1)**, **(2)**, and **(3)** do not refer to the *composition* of the lava.
- 23. (5)** During an eclipse of the sun, the moon comes between the Earth and the sun and, for those on Earth watching from the site of the eclipse, appears to cover the sun for several minutes. Since the sun is shining, these solar eclipses occur during the daytime and the sky turns temporarily dark. You can see from the diagram that this type of eclipse is seen from only a small area.
- 24. (5)** If the gene for blue eyes were recessive, then each of the parents could have had both brown and blue genes despite their brown eyes. In that case, the baby could have received the blue gene from each parent. Another explanation is that a brown gene had mutated (changed) to a dominant blue gene.
- 25. (4)** The acid or alkaline strength of a solution is measured on the pH scale, where 7 is neutral. A pH less than 7 is acidic, whereas a pH greater than 7 is alkaline.
- 26. (4)** The unusual fly appeared due to mutation. Most of the flies looked like their parents because their genes were copies of their parents' genes. The genetic copying occurs during reproduction, and there are rare cases of mistakes made during the copying. Such mistakes lead to new genes, and, therefore, new flies. That change is called a *mutation*.

- 27. (1)** Below the melting point, only a solid metal could exist. The lowest melting point on the list is cesium at 29° Celsius. So, in a warm room, cesium occurs as a metallic liquid.
- 28. (2)** The temperature range as a liquid is the difference between the boiling point and the melting point. You must subtract the melting point of each element from its boiling point. The largest temperature range in the list is for lithium:  $1336 - 186 = 1150$ .
- 29. (1)** Because you are seeking the *largest* atoms, you must find the *weakest* bonds. The first sentence tells you that gases have weak bonds. Of the five elements, the one with the lowest boiling point (cesium) is the easiest to change into a gas. So, cesium has the largest atoms, and lithium has the smallest atoms.
- 30. (5)** Sunlight is the source of the continuing energy needed by this system to survive. Sunlight plays the same role in the larger closed system, the Earth. Without this energy input the plants and then the animals would die. Choices (1), (2), and (4) do provide a small but fairly unimportant energy source.
- 31. (2)** The three substances will occur in order of density, with the lightest at the top and the heaviest at the bottom. Natural gas is lighter than the two liquids, so it would be at the top where the drill hole would find it first. Oil floats on top of water (think of salad dressing), so the drill would meet oil second and water third.
- 32. (3)** A cold-blooded animal cannot control its internal body temperature, so it takes on the temperature of the surrounding air or water. In cold areas the blood of such an animal will be cold, but in hot areas its blood will be hot.
- 33. (1)** Biotechnology is sometimes described as genetic engineering because it deals with the basic information in the genes. Biotechnology can be used for any problem concerning *life*. Choice (1), however, does not concern life, since Portland cement is an inorganic material produced by burning two rocks: limestone and shale.
- 34. (2)** The action of weather slowly breaks down bedrock into the fine material called soil.
- 35. (4)** The scale on the thermometer has marks that are evenly spaced. Such a simple scale is possible only because liquid mercury expands in a regular manner when heated. If the expansion were irregular, a simple thermometer would not work. Upon heating, all the mercury expands, including that in the bulb, but the only free direction for the liquid to swell is upward.
- 36. (3)** Children are somewhat like their parents because all their genes come from their mother and father. The genes govern the development of the child. The chemical compound that stores that genetic information is deoxyribonucleic acid, commonly abbreviated as *DNA*. Only choice (3) mentions “genetic information.”
- 37. (1)** The three compounds are all carbohydrates, because they are sugars. The mention of “sugar beets” is probably the best clue, since sugar beets obviously contain sugar. The ending *ose* is used for all sugars.
- 38. (2)** The walls of the blood vessels and other tubes are mainly built from lipids. If you look at the definition of the lipids, you will notice that it says they are needed “for tissues and membranes.” Every cell in the body is inside a “skin” of lipids.
- 39. (3)** The average diet gets about one-third of the calories from carbohydrates, one-third from lipids (fats), and one-third from protein. The right answer is choice (3). Food is poor in nucleic acids and phosphates, so the body must make those compounds.



- 40. (5)** The animal must pass on its superior features to some offspring, or the new features will merely die out. So, the animal must mate and reproduce itself. The phrase “survival of the fittest” means that the animal must survive all threats until it can reproduce.
- 41. (1)** The cytoplasm in either plant or animal cells varies in consistency from fluid to semi-solid. You can see that some of the material in the drawing appears to be more solid than other material. And you can eliminate **(2)**, **(3)**, and **(4)** because the diagram shows these are not true. The information in the question tells you that cytoplasm is in “any” cell, so **(5)** is not true.
- 42. (2)** Each type of animal or plant will probably have its own requirements on where to live and what to eat. The slightly different requirements for the different species mean there will be little competition among different species **(1)**, but there is always severe competition among individuals of each separate species.
- 43. (2)** The second conclusion could not come directly from the study of processes now happening because there are no living dinosaurs to study. The other four conclusions are based on what is happening today. Geologists can study stream valleys, evaporation ponds, shell beds, and glacial deposits.
- 44. (3)** The molecules in any liquid are continually moving in all directions. If such a molecule hits a small particle, the particle is forced to move. The irregular movement of small particles reveals the invisible motion of molecules. The higher the temperature is, the faster the molecules move.
- 45. (3)** Without enzymes, many of the chemical reactions in the body would not occur fast enough. The reactions are speeded up by enzymes. In the question, the word *catalyst* means a substance that speeds up a reaction. Choice **(1)** is wrong because an enzyme is not a hormone.
- 46. (1)** The last four choices agree with the idea that such bodies of ore formed from hot water solutions seeping along underground cracks. Choice **(1)** is true, but magnetism is simply not connected to the formation of the deposits and has nothing to do with water.
- 47. (5)** Any object with a density of less than 1.0 will float on water. Because Saturn has a density of 0.70 g/cm<sup>3</sup>, it would float.
- 48. (4)** From the information given, **A** and **B** are both accurate general relationships. Density is generally greater closer to the sun and temperatures are lower farther from the sun.
- 49. (2)** From the information given, Venus has the highest surface temperature of any of the planets (500°C). The other statements are false.
- 50. (5)** No direct or inverse proportions can be concluded from the information. You can see this as you try to make relationships between the density, temperature, and diameter. There are no consistent relationships.

## LANGUAGE ARTS, READING

- 1. (1)** Adding *s* to the beginning of *weep* would make it *sweep*, which is the cry you would expect from a chimney sweep.
- 2. (2)** Line 22, “And got with our bags and our brushes to work,” gives the idea that bags are used by sweepers as part of their work.

3. (4) The dream begins with boys locked up in coffins, and then they are saved from this scary situation by an Angel. Later, the boys ride happily on the clouds.
4. (1) The fifth stanza, lines 17–20, describes the boys having a joyful time riding on the clouds. While they are having a good time, the Angel tells Tom that “if he’d be a good boy,” he would “never want joy” — that is, he would continue to feel joyful.
5. (5) In line 21, the poet says, “we rose in the dark,” and then mentions that it is “morning” in line 23, so we know that he is waking up with Tom very early in the morning, while it is still dark.
6. (2) Throughout the excerpt, the author writes about ants with terms he might use to describe human soldiers. His comparison with human soldiers is clear when he says, in lines 27–28, that “human soldiers never fought so resolutely.” Choice (3) contradicts the author’s comment that the battle between ants was “the only battle which I have ever witnessed” (line 20).
7. (1) The style of the writing is personal (subjective). Choices (2), (3), (4), and (5) (advertisement, history book, scientific study, and news story) are types of writing that are more formal and objective.
8. (3) This ant is described (lines 50–51) as one who has either won his last fight (“despatched his foe”) or “not yet taken part in the battle.” In either case, he is uninjured (“he had lost none of his limbs”).
9. (4) In this part of the excerpt, the author makes it clear that the ants will not give up, and earlier (lines 6–7) he says that “having once got hold they never let go.” Also, bulldogs are known for holding firmly. None of the other choices fits the description of the battling ants.
10. (1) The author uses the terms and images of human battle to describe the battle between the ants. None of the other choices is supported by the passage.
11. (5) Though the battle probably did take place and so *factual* is a possible answer, the better choice is *imaginative*. If the author really wished to write a factual account, he would probably leave out all of the comparisons of ants and men.
12. (3) This choice describes what the writer is doing in the excerpt; each of the other choices contradicts the unusual imagination of the author.
13. (1) You can see that the word *duellum* looks like *duel* (which it means in Latin), and the author indicates that *bellum* means *war* by following the Latin word with “a war.”
14. (2) Mrs. Dashwood is the mother of Elinor and Marianne. The first sentence tells you that Elinor is the “eldest daughter.” So, the order from oldest to youngest is Mrs. Dashwood, Elinor, Marianne.
15. (4) The passage tells you, in lines 12–13, that Elinor’s “feelings were strong, but she knew how to govern them.” Marianne has “no moderation” (line 21) in her feelings — that is, she does *not* control them.
16. (5) Mrs. Dashwood and Marianne are alike. Neither has “moderation.”
17. (4) The difference the story makes clear is between self-control and uncontrolled feelings — that is, the difference between good sense and too much sensibility (feeling).

- 18. (1)** Notice that the excerpt insists that Elinor does have feelings. Because both Mrs. Dashwood and Marianne cannot control their emotions, neither **(3)** nor **(4)** can be right.
- 19. (3)** You first see Vivie reading, taking notes, and lying with a large pile of books and papers nearby. All of these suggest that she is studious.
- 20. (4)** Vivie’s handshake is much firmer than Mr. Praed had expected, and we see him, in lines 35–37, “exercising his fingers, which are slightly numbed by her greeting.”
- 21. (5)** Several details in the scene (Mrs. Warren’s unexpected visit and Vivie’s comment on this, for example) suggest that mother and daughter do not get along well.
- 22. (2)** Unlike Vivie, Mr. Praed has very conventional, polite notions about how a man and a young woman should behave.
- 23. (4)** Vivie’s handshake is a good example of Vivie’s unconventional behavior (behavior that is not normal or expected) in this scene.
- 24. (3)** For the remainder of the second paragraph, the writer seems to criticize the changing of old movies for profit, suggesting that the studios and networks do not care (as the writer does) about the “visual integrity” of a movie.
- 25. (1)** The sentence that begins the third paragraph (lines 32–33) supports this answer choice. “Some people, especially young people nurtured [brought up] on color TV, like the idea.”
- 26. (5)** “Art director” is being used in the same way as “paintbrush” here. The author is suggesting that the computerized “paintbrush” is not really a paintbrush and the “art director” is not really an art director. Quotation marks are often used for words that are used in a way that is different from the ordinary or normal way.
- 27. (3)** *Red River* is listed as one of those movies that display “shades of pearl and ivory,” so the paragraph suggests that it is a black-and-white film. You might think that **(5)** is the right answer, but although the article talks about many old films in black and white, it doesn’t suggest that they *all* are.
- 28. (1)** This answer choice is supported by Petrik’s statement (lines 45–46), “We’re trying to make great films better.” The “great” films he is talking about are black and white, and the “better” films are colored.
- 29. (2)** Line 22 says that colorization is a computerized process. None of the other choices is suggested by the article.
- 30. (2)** Of the answers provided, it is most likely that John feels hurt and angry that his mother hasn’t remembered his birthday (line 53). That he swears he won’t mention it or think about it indicates hurt feelings, although nothing suggests he is on the verge of tears **(4)**.
- 31. (4)** The rug was once “that room’s glory,” but is now faded and frayed, suggesting that the family cannot afford a new one. It is possible that **(1)** is correct, but there is no evidence for this. Choices **(2)** and **(3)** are unlikely; the old carpet has not been replaced. John’s task and his mother’s attitude indicate that **(5)** is not accurate.
- 32. (1)** To John, the task is endless because the dust immediately settles in the carpet after he sweeps — “so much labor brought so little reward.” He gets no sense of accomplishment from finishing his sweeping. Choices **(2)**, **(3)**, and **(5)** may be true, but they are not John’s main complaint.



- 33. (5)** The words used to describe John’s thoughts suggest that he is dramatizing and exaggerating his task. For example, he calls it “impossible, lifelong” and a “hard trial.” He compares himself to a man who must push a boulder up a hill for all eternity, and he also refers to his sweeping as a “voyage with the broom across this endless rug.” Nothing indicates excitement **(1)**, humor **(2)**, or philosophical reflection **(4)**. Choice **(3)** might seem a plausible answer, but although John is bitter about his birthday and this task, he doesn’t think about getting revenge.
- 34. (3)** This is the best answer. John never likes to sweep the carpet, but his reaction in this excerpt seems to be intensified by his feelings about his birthday. No new point of view **(5)** is presented, and there is no indication in the excerpt that John’s mother is cruel **(4)**. While John may seem immature because of his dramatic reaction, he is not dishonest **(1)**. The last line of the passage doesn’t function as any type of summary **(2)**.
- 35. (3)** Although the picture of Miss Louise is a result of a child’s perception **(1)**, it is Dakota as an adult who is recalling her great aunt. Miss Louise is Dakota’s grandmother’s sister (lines 4–5), not her grandmother **(4)**.
- 36. (1)** The details throughout the passage suggest that Dakota has strong, positive feelings about Miss Louise. See lines 8–10, 11–20, and so on. Choice **(5)** may seem like the correct answer, but although Dakota admires her, nothing indicates she wants to be “just like” Miss Louise. There is no evidence for **(3)**, and both **(2)** and **(4)** are simply incorrect.
- 37. (4)** See lines 29–31. Miss Louise treats Dakota and Taylor as she would treat any visitor; she is not “overly permissive” **(1)**. Although **(3)** could be correct, nothing directly suggests this. There is also no evidence for **(2)** or **(5)**.
- 38. (5)** All of Miss Louise’s behavior suggests that she understands people and how to treat them, making this the best answer. None of the other choices are compatible with the picture of her that Dakota presents in the excerpt.
- 39. (1)** Although Miss Louise does have many books **(3)**, this would not lead Dakota to characterize her as “brilliant.” Dakota recognizes that Miss Louise’s gift is in her way of dealing with people, even children. The reader is given no evidence for **(2)** or **(4)**. Choice **(5)** is irrelevant in the excerpt.
- 40. (4)** Two facts are presented in the excerpt: Miss Louise’s son was lost in the war (lines 45–46) and she fastens her dresses with a pair of Air Force wings (lines 37–38). There is no evidence for **(1)**, **(2)**, **(3)**, or **(5)**, even though they may be true.

## MATHEMATICS

- 1. (4)** Add  $52\% + 23\% = 75\%$  spent on purchase payments and insurance. Since the entire graph equals 100%,

$$100\% - 75\% = 25\% \text{ remaining.}$$

You can also notice that after purchase payments and insurance are removed, three wedges of the graph remain: state and local fees, maintenance, and fuel. You can add these three to get the answer:

$$4\% + 7\% + 14\% = 25\% \text{ remaining}$$

- 2. (4)** Since you need to find how many groups of 15 trees there are in 200, divide:

$$\begin{array}{r} 13 \overline{)200} \\ \underline{15} \phantom{00} \\ 50 \\ \underline{45} \phantom{0} \\ 5 \end{array} = 13 \frac{5}{15} = 13 \frac{1}{3}$$

- 3. (4)** Since 20% is discounted, the buyer will pay 80% of \$10,000:

$$80\% \text{ of } \$10,000 = .80 \times \$10,000 = \$8000.00$$

Reminder: “%” means *out of 100*, and “of” means *multiply*.

- 4. (152)** To find the mean (average), add all values:

$$186 + 124 + 146 = 456$$

Divide your total by the number of values (in this case, 3):

$$\begin{array}{r} 152 \\ 3 \overline{)456} \\ \underline{3} \phantom{00} \\ 15 \\ \underline{15} \phantom{0} \\ 06 \\ \underline{6} \phantom{0} \\ 0 \end{array}$$

- 5.  $x = 6$ .** To solve the equation, first add 18 to each side.

$$\begin{array}{r} 4x - 18 = 6 \\ + 18 \quad + 18 \\ \hline 4x = 24 \end{array}$$

Next, divide each side by 4:

$$\begin{array}{r} \frac{4x}{4} = \frac{24}{4} \\ x = 6 \end{array}$$

- 6. (4)** You need to find 15% of the total amount spent, so begin by finding the total amount Arnie spent:

$$\$250 + \$380 = \$630$$

Now,

$$15\% \text{ of } \$630 = .15 \times \$630 = \$94.50$$

Reminder: “%” means *out of 100*, and “of” means *multiply*.

- 7. (3)** Multiply the number of days Lorene jogs by the hours she jogs each day.

Using fractions:

$$5 \times 1\frac{1}{2} = \frac{5}{1} \times \frac{3}{2} = \frac{15}{2} = 7\frac{1}{2}$$

Or using decimals:

$$5 \times 1.5 = 7.5$$

8. (4) Note that the scale on the left says “hundreds of dollars.”

$$1970 = \$125 \text{ and } 1985 = \$650$$

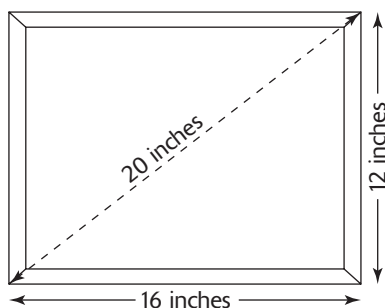
The question asks for the *increase*, so

$$\$650 - \$125 = \$525 \text{ increase}$$

9. (5) In order to answer this question, you would need to know how many of the scouts collected more than 50 pounds of newspapers. Since this information is not given, this problem cannot be solved.
10. (2) The den is to collect 301 pounds in 14 days. To find how many pounds per day, divide the number of days into the number of pounds:

$$\begin{array}{r} 21.5 \\ 14 \overline{)301.0} \\ \underline{28} \phantom{0} \\ 21 \phantom{0} \\ \underline{14} \phantom{0} \\ 70 \phantom{0} \\ \underline{70} \\ 0 \end{array}$$

11. (2) The diagonal separates the rectangle into triangles. Each of the triangles is a right triangle (has a 90-degree interior angle) if the diagonals are equal. So, to find the length of the diagonal, use the Pythagorean theorem:



$$a^2 + b^2 = c^2$$

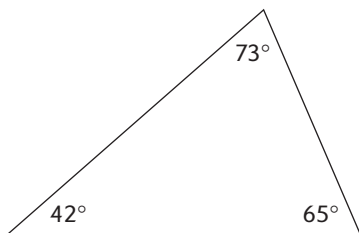
$$12^2 + 16^2 = c^2$$

$$144 + 256 = c^2$$

$$400 = c^2$$

$$20 = c$$

12. (65) The sum of the three interior angles of any triangle is 180 degrees. To find the measure of the missing angle, first add the two amounts you know:



$$73 \text{ degrees} + 42 \text{ degrees} = 115 \text{ degrees}$$

Now, find how many more degrees are needed for a total of 180:

$$180 \text{ degrees} - 115 \text{ degrees} = 65 \text{ degrees}$$

So, 65 degrees must be the measure of the third interior angle.

**13. 9**

2 pounds  $\rightarrow$  6 dozen

1 pound  $\rightarrow$  3 dozen

So, if you multiply both sides of the above by nine:

$9 \times 1 \text{ pound} \rightarrow 9 \times 3 \text{ dozen}$

9 pounds  $\rightarrow$  27 dozen

Or using a proportion:  $\frac{2}{6} = \frac{x}{27}$

Reduce to:  $\frac{1}{3} = \frac{x}{27}$

Now, cross multiply, giving  $3x = 27$

Finally, divide by 3:  $\frac{3x}{3} = \frac{27}{3}$

$x = 9$

**14. (2)** Luke's food items (celery, lettuce, chicken) total

$$\$0.29 + \$0.69 + \$2.68 = \$3.66$$

There is a tax of 6% for nonfood items (dish soap):

$$6\% \text{ of } \$1.50 = .06 \times \$1.50 = \$0.09 = \text{tax}$$

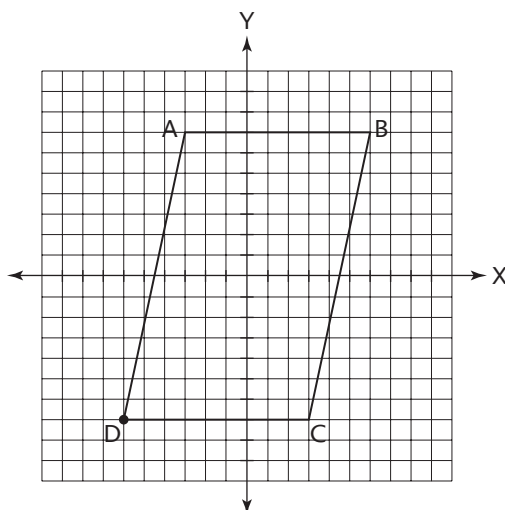
So, Luke's total bill is

$$\text{Food} + \text{nonfood} + \text{tax} = \$3.66 + \$1.50 + \$0.90 = \$5.25$$

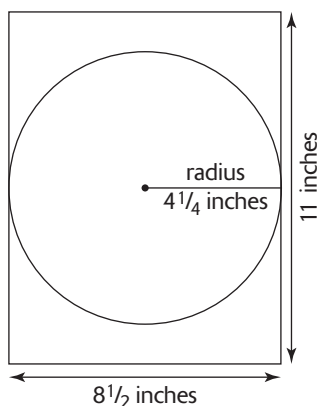
**15. (2)** *Median* means the *middle value* of a list put in order:

\$27,000; \$25,000; \$25,000; \$22,000; \$21,000; \$20,000; \$17,000

**16. (3)** The two years in which females earned a greater number of degrees than males were 1990 and 2000. In 1990, females earned 60,000 more degrees ( $550,000 - 490,000 = 60,000$ ). In 2000, they earned 140,000 more degrees ( $660,000 - 520,000 = 140,000$ ). The total of the two years is 200,000.**17. (-6,7)** Notice that segment AD must have the same slope as segment BC, since the opposite sides must be parallel. The slope of BC is  $\frac{7}{1}$ . So, the actual coordinates of point D are (-6,7).



18. (4) Without going off the paper, the *diameter* of the largest circle would be  $8\frac{1}{2}$  inches.



Since the radius is half the diameter,

$$\frac{1}{2} \text{ of } 8\frac{1}{2} = \frac{1}{2} \times 8\frac{1}{2} = \frac{1}{2} \times \frac{17}{2} = \frac{17}{4} = 4\frac{1}{4}$$

19. (3)

Top Sirloin: 8 pounds + 1 pound =

$$(4 \times \$5.00) + \$2.99 = \text{(Note: 2 pounds for \$5.00)}$$

$$\$20.00 + \$2.99 = \$22.99$$

Filet Mignon: 8 pounds =

$$8 \times \$4.00 = \$32.00$$

London Broil: 6 pounds + 1 pound =

$$(2 \times \$5.00) + \$1.79 = \text{(Note: 3 pounds for \$5.00)}$$

$$\$10.00 + \$1.79 = \$11.79$$

Add to find the total:

$$\$22.99 + \$32.00 + \$11.79 = \$66.78$$

- 20. (2)**  $10\%$  of  $\$321 = .10 \times \$321 = \$32.10$

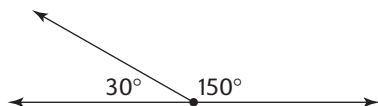
Subtracting:  $\$321.00 - \$32.10 = \$288.90$

$\$288.90$  approximately equals  $\$290$

Or, Jason loses  $10\%$  of his pay but will get  $90\%$  of his pay:

$$90\% \text{ of } \$321 = .90 \times \$321 = \$288.90$$

- 21. 150** The sum of the two angles must equal 180 degrees, since they form a straight line (straight angle).



$$z + y = 180$$

$$5y + y = 180 \text{ (} z \text{ is 5 times } y \text{)}$$

$$6y = 180 \text{ (combining like terms)}$$

$$\frac{6y}{6} = \frac{180}{6} \text{ (dividing both sides by 6)}$$

$$y = 30$$

Since  $z + y = 180$ , and  $y = 30$ ,  $z$  must equal 150 degrees:

$$180 - 30 = 150$$

Here is another way to think about it: Since  $z$  is 5 times  $y$ , and  $y = 30$ ,

$$z = 5 \times 30 = 150 \text{ degrees}$$

- 22. (48)** There are 12 cookies per dozen, so there are  $6 \times 12 = 72$  cookies in the assortment. There are twice as many chocolate as vanilla, so

$$\text{chocolate} + \text{vanilla} = 72 \text{ cookies}$$

$$2 \times \text{vanilla} + \text{vanilla} = 72$$

$$3 \times \text{vanilla} = 72$$

Divide each side by 3:

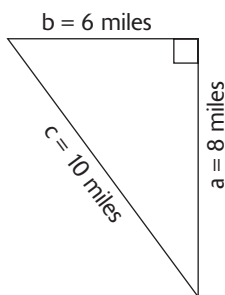
$$\frac{3 \times \text{vanilla}}{3} = \frac{72}{3}$$

$$\text{vanilla} = 24$$

So, if there are 24 vanilla cookies, there must be

$$72 - 24 = 48 \text{ chocolate cookies}$$

- 23. (4)** To find the third side of this right triangle, use the Pythagorean theorem:



$$a^2 + b^2 = c^2$$

$$8^2 + 6^2 = c^2$$

$$64 + 36 = c^2$$

$$100 = c^2$$

$$10 = c \text{ (because } 10 \times 10 = 100 \text{)}$$

**24. (1)**

$10^0 = 1$

$10^4 = 10,000$

$10^1 = 10$

$10^5 = 100,000$

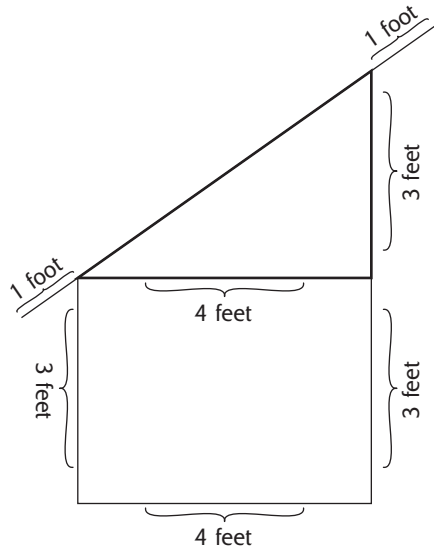
$10^2 = 100$

$10^6 = 1,000,000$

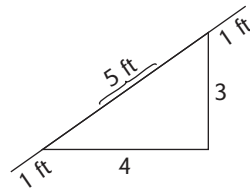
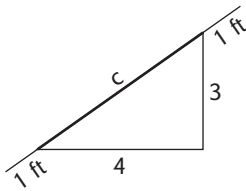
$10^3 = 1000$

So,

$$2.69753 \times 10^5 = 2.69753 \times 100,000 = 269,753$$

**25. (3)** To solve this problem, concentrate on the right triangle with legs 3 feet and 4 feet:

To find the hypotenuse (the middle section of the roof), use the Pythagorean theorem:



$$a^2 + b^2 = c^2$$

$$3^2 + 4^2 = c^2$$

$$9 + 16 = c^2$$

$$25 = c^2$$

$$5 = c$$

When you add 1 foot to the front and 1 foot to the back for the overhangs, the result is

$$1 + 5 + 1 = 7 \text{ feet}$$

- 26. (3)** Since there are 5 even numbers out of 10 possible, the probability is  $5/10$ , or  $1/2$ .
- 27. (4)** You want to find how many 25's it takes to make 500, so divide the calls per day (25) into the total calls (500):

$$\begin{array}{r} 20 \\ 25 \overline{)500} \\ \underline{50} \phantom{0} \\ 0 \\ \underline{0} \\ 0 \end{array}$$

So, Jamal would be expected to be finished 20 days from June 1st — June 20th.

- 28. (4)** Since angle X and angle Z have equal measures, the sides opposite them have equal measures. So,  $ZY = 12$  feet. To find the perimeter (distance around the triangle), add the three sides:

$$12 \text{ feet} + 12 \text{ feet} + 7 \text{ feet} = 31 \text{ feet}$$

- 29. (3)** The sport with the **LEAST** attendance was the National Hockey League, which had 15,000,000. Notice that all of the attendance is in millions.

- 30. (2)** The sport that had the greatest attendance in 1985 was Major League Baseball, with about 48 million spectators. The sport with the least attendance for 1985 was Pro Basketball, with about 10 million spectators. Since the question asks for the **DIFFERENCE**, subtract

$$48 \text{ million} - 10 \text{ million} = 38 \text{ million}$$

- 31. (24)** When Al is 21, Chet will be 26 (because Al is 5 years younger than Chet). If Chet is 26, then Tom is 24 (because Chet is 2 years older than Tom). Since Tom and Joe are twins, Joe will also be 24.

- 32. (2)** The square root of a number is a number which, when multiplied by itself, produces the number. For example, the square root of 25 is 5 because  $5 \times 5 = 25$ .

$$6 \times 6 = \underline{36} \qquad 7 \times 7 = \underline{49}$$

So, the square root of 40 must be between 6 and 7 because 40 is between 36 and 49.

- 33. (3)** To find the total number of minutes, add together all the minutes Gary rode his bicycle:

$$45 + 30 + 40 + 50 = 165 \text{ minutes}$$

To find the total number of calories burned, multiply the total minutes by the number of calories burned per minute:

$$165 \times 3.3 = 165(3.3)$$

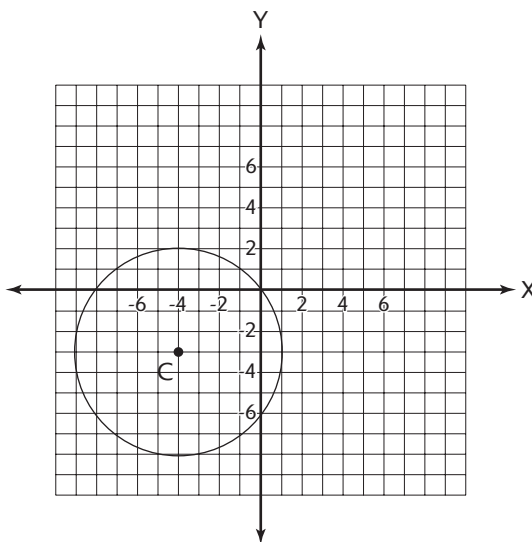
- 34. (2)** At the time of the storm, Lawrence and Betty had watched 15 minutes out of 105 minutes of the movie:

$$\frac{15}{105} = \frac{1}{7}$$

(60 minutes = 1 hour; 30 minutes =  $\frac{1}{2}$  hour; 15 minutes =  $\frac{1}{4}$  hour)

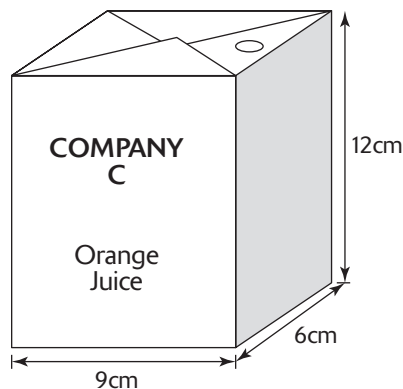


- 35. (2)** Since the lines that represent Japan and Europe intersect (meet) in 1960, this would indicate that they produced the same number of vehicles that year.
- 36. (4)** You can see that Canada's production increased slowly for the first few years but then had a very slight increase.
- 37.  $(-4, -3)$**



Notice which two grid lines seem to cut the circle in half: the horizontal line where  $y = -3$  and the vertical line where  $x = -4$ . So, the actual coordinate is  $(-4, -3)$ .

- 38. (5)** To answer this question, you would need to know the length of side  $XY$  so that you could set up a proportion. Since this information is not given, this problem cannot be solved.
- 39. (3)** There are 2 dozen oatmeal cookies out of a total of 9 dozen cookies:
- $$3 + 2 + 4 = 9$$
- So, the chance of getting an oatmeal cookie is 2 out of 9, or  $2/9$ .
- 40. (2)** To find the volume of a container that stands up straight with its sides perpendicular to its base, find the area of its base:



length  $\times$  width

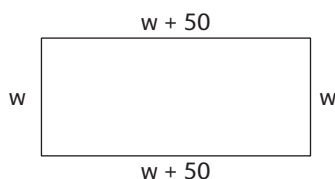
Then multiply this by its height:

length  $\times$  width  $\times$  height = volume

$$9 \times 6 \times 12 = 9(6)(12)$$

But, the package can be filled to only  $3/4$  of capacity. So,  $(3/4)(9)(6)(12)$  is correct.

41. (2)



$w$  = width

$w + 50$  = length (its length is 50 feet more than its width)

Since “perimeter” means distance around,

perimeter =  $w + (w + 50) + w + (w + 50)$

$$\begin{array}{r} 600 = 4w + 100 \\ -100 \quad -100 \\ \hline 500 = 4w \end{array} \quad (\text{subtract 100 from both sides})$$

$$\frac{500}{4} = \frac{4w}{4} \quad (\text{divide both sides by 4}). \text{ So, } w = 125.$$

42. (1) *Triple* means *multiply by three*, and equation (1) describes this:

$$39 = 3T \quad (39 \text{ is 3 times Tina's age.})$$

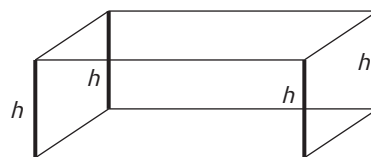
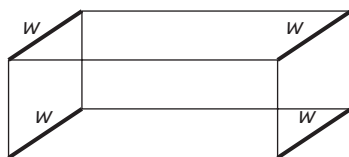
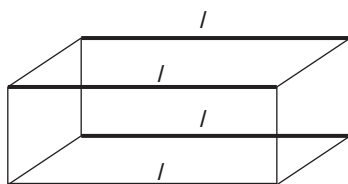
43. (124) According to the graph, 20% of the people at Annette’s school have hazel eyes, while 40% have brown eyes. This means that there are twice as many brown-eyed people as there are hazel-eyed people.

62 people have hazel eyes

$2 \times 62$  people have brown eyes

So,  $2 \times 62 = 124$  people who have brown eyes

44. (2) To solve this problem, you need to add up the lengths of all of the edges.



There are:

4 edges of length  $l$

4 edges of length  $w$

4 edges of length  $h$



for a total of  $4l + 4w + 4h$

45. (2) Let’s take a look at Wednesday the 8th through Monday the 20th:

Wed Thurs Fri Sat Sun Mon Tue Wed Thurs Fri Sat Sun Mon

$$25 + 25 + 25 + 50 + 75 + 25 + 25 + 25 + 25 + 25 + 50 + 75 + 25 = \$4.75$$

46. (1) When you consume calories, you add them into your body, so add up the total number of calories that Andre consumed:

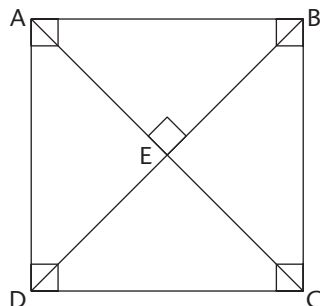
$$250 + 500 + 125 + 275$$

When you burn calories, you take them away from your body, so subtract the number of calories Andre burned:  $-980$

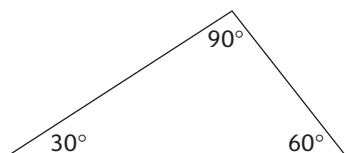
So, the net (final) result is

$$250 + 500 + 125 + 275 - 980$$

- 47. (4)** Each angle of a square measures  $90^\circ$ . The diagonals of a square are equal and meet at right angles ( $90^\circ$ ). So, the measure of the angle AEB is equal to the measure of angle ADC.



- 48. (3)** The first angle has a measure of one increment; the second has a measure of two increments; and the third has a measure of three increments.



$$1 + 2 + 3 = 6 \text{ increments}$$

The sum of the three interior angles of any triangle is  $180^\circ$ :

$$6 \text{ increments} = 180$$

$$\frac{6 \text{ increments}}{6} = \frac{180}{6} \quad (\text{dividing by } 6)$$

$$1 \text{ increment} = 30$$

So, the three angles are

$30^\circ$  (1 increment),  $60^\circ$  (2 increments), and  $90^\circ$  (3 increments)

But the easiest and fastest way to find this answer is to look at the answer choices to see which one adds up to  $180^\circ$ . In this case, only answer **(3)** does, so you know that's the right one — since the three interior angles of a triangle *must* add up to  $180^\circ$ .

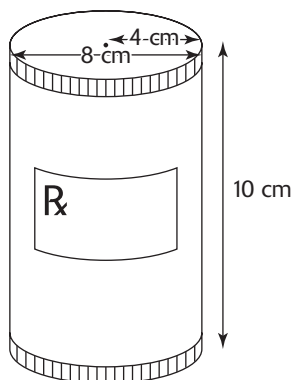
- 49. (3)** To calculate Hal's raise, find 18% of \$14,000 =  $.18(\$14,000)$

Now add this amount to his old salary:

$$\$14,000 + .18(\$14,000)$$

Reminder: “%” means *out of 100*, and “of” means *multiply*.

- 50. (2)** To find the volume of a container standing straight with its sides perpendicular to its base,



1. Find the area of its base (in this case, a circle):

area of circle =  $\pi r^2 = \pi(4)^2$  (because the diameter is 8, the radius is 4)

2. Multiply the area of the base (circle) by the height to find the volume:

$$\text{area of circle} \times \text{height} = \pi(4)^2(10)$$



## Notes

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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