

**Florida Teacher Certification Examination
Test Preparation Guide**

General Knowledge Test



FLORIDA DEPARTMENT OF EDUCATION

www.fldoe.org

First Edition

Developed, produced, and printed under the authority of the
Florida Department of Education

Subject area content developed by the
Institute for Instructional Research and Practice
College of Education
University of South Florida

Produced by the
Institute for Instructional Research and Practice
College of Education
University of South Florida

Authorization for reproduction is hereby granted to persons acting in an official capacity within the State System of Public Education as defined in Section 228.041(1), Florida Statutes. The copyright notice on the bottom of the page must be included on all copies.

Permission is NOT granted for distribution or reproduction outside the State System of Public Education or for commercial distribution of the copyrighted materials without written authorization from the Department of Education. Questions regarding use of these copyrighted materials are to be addressed to:

FTCE Administrator
Florida Department of Education
325 West Gaines Street, Suite 414
Tallahassee, Florida 32399-0400

Copyright 2002
State of Florida
Department of State

Contents

| | | |
|----------|--|-----------|
| 1 | Test and Test Preparation Guide Development | 1 |
| 2 | Preparation for the Test | 3 |
| 3 | Competencies and Skills | 5 |
| 4 | Test Format and Sample Questions | 11 |
| 5 | Test-Taking Advice | 43 |
| 6 | Additional Information | 45 |





Test and Test Preparation Guide Development

Teacher Certification Testing

Since 1980, Florida teacher certification candidates have been required to pass the Florida Teacher Certification Examination (FTCE), which has consisted of tests in reading, writing, mathematics, and professional knowledge. The 1986 Florida Legislature modified the testing program by also requiring teacher candidates to pass a test in the subject area in which they wish to be certified. In addition, the Legislature substituted the Florida College-Level Academic Skills Test (CLAST) for the reading, writing, and mathematics portions of the FTCE. The 2000 Florida Legislature replaced the CLAST with the General Knowledge Test, effective July 1, 2002.

The General Knowledge Test consists of four subtests: Essay, English Language Skills, Mathematics, and Reading. The content assessed on the test was identified and validated by committees of subject area specialists from within the state of Florida. A majority of the committee members were public school teachers, but the committees also included district supervisors and college faculty with expertise in these fields. Committee members were selected on the basis of recommendations by professional associations, experts in the field, and teachers' unions. In developing the test, the committees used an extensive literature review, interviews with selected public school teachers, a large-scale survey of teachers, pilot tests, and their own professional judgment.

Role of the Test Preparation Guide

The purpose of this test preparation guide is to help candidates taking the General Knowledge Test prepare effectively for the examination. The guide was designed to familiarize prospective test takers with various aspects of the examination, including the content that is covered and the way it is represented. The guide should enable candidates to direct their study and to focus on relevant material for review.

This test preparation guide is intended primarily for use by certification candidates, who may be students in a college or university teacher-preparation program, teachers with provisional certification, or persons making a career change to public school teaching. Candidates may have studied and worked in Florida or may be from out of state.

College or university faculty may also use the guide to prepare students for certification.

This test preparation guide is not intended as an all-inclusive source of general knowledge, nor is it a substitute for college course work. The sample items are not an exact representation of the content of the actual test. Instead, the guide is intended to help candidates prepare for the General Knowledge Test by presenting an overview of the content and format of the examination.



Preparation for the Test

The following outline may help you to prepare for the examination. Adapt these suggestions to suit your own study habits and the time you have available for review.

Overview

- **Look over the organization of the test preparation guide.**

Section 1 discusses the development of the test and test preparation guide.

Section 2 (this section) outlines test preparation steps.

Section 3 presents information about the content of the test.

Section 4 lists question formats and includes sample test items.

Section 5 offers strategies for taking the test.

Section 6 identifies sources of further information.

Self-Assessment

- **Decide which content areas you should review.**

Section 3 includes the competencies and skills used to develop this test and the approximate proportion of test items from each competency area.

Review

- **Study according to your needs.**

Review all of the competencies, concentrating on areas with which you are least familiar.

Practice

- **Acquaint yourself with the format of the examination.**

Section 4 describes types of questions you may find on the examination.

- **Answer sample test questions.**

Section 4 gives you an opportunity to test yourself with sample test questions and provides answer keys.

Final preparation

- **Review test-taking advice.**

Section 5 includes suggestions for improving your performance on the examination.



3

Competencies and Skills

The table on the following pages lists the competencies and skills used as the basis for the General Knowledge Test. These competencies and skills represent the knowledge that teams of teachers, subject area specialists, and district-level educators have determined to be important for beginning teachers. This table could serve as a checklist for assessing your familiarity with each of the areas covered by the test.

The following excerpt illustrates the components of the table:

Competency *Approximate number of test items*

| Competency/Skill | Items |
|---|----------|
| ENGLISH LANGUAGE SKILLS | |
| 1 Conceptual and Organizational Skills | 4 |
| 1 Identify logical order in a written passage. 2 Identify irrelevant sentences. | |
| 2 Word Choice Skills | 6 |
| 1 Choose the appropriate word or expression in context. 2 Recognize commonly confused or misused words or phrases. 3 Recognize diction and tone appropriate to a given audience. | |
| 3 Sentence Structure Skills | 6 |
| 1 Recognize correct placement of modifiers. 2 Recognize parallelism, including parallel expressions for parallel ideas. 3 Recognize fragments, comma splices, and run-on sentences. | |

Skill

Competencies are areas of content knowledge.

Skills identify behaviors that demonstrate the competencies.

Number of items indicate the approximate number of test items that represent the skill on the test.

Table of Essay Skills

| Competency/Skill |
|------------------|
|------------------|

| |
|----------------------------|
| <p>ESSAY SKILLS</p> |
|----------------------------|

- | |
|---|
| <ul style="list-style-type: none">◆ Determine the purpose for writing.◆ Formulate a thesis or statement of main idea.◆ Organize ideas and details effectively.◆ Provide adequate, relevant supporting material.◆ Use effective transitions.◆ Demonstrate a mature command of language.◆ Avoid inappropriate use of slang, jargon, and clichés.◆ Use a variety of sentence patterns effectively.◆ Maintain consistent point of view.◆ Observe the conventions of standard American English. |
|---|

Table of Competencies, Skills, and Number of Items

| Competency/Skill | Items |
|--|--------------|
| ENGLISH LANGUAGE SKILLS | |
| 1 Conceptual and Organizational Skills | 4 |
| 1 Identify logical order in a written passage. 2 Identify irrelevant sentences. | |
| 2 Word Choice Skills | 6 |
| 1 Choose the appropriate word or expression in context. 2 Recognize commonly confused or misused words or phrases. 3 Recognize diction and tone appropriate to a given audience. | |
| 3 Sentence Structure Skills | 6 |
| 1 Recognize correct placement of modifiers. 2 Recognize parallelism, including parallel expressions for parallel ideas. 3 Recognize fragments, comma splices, and run-on sentences. | |
| 4 Grammar, Spelling, Capitalization, and Punctuation Skills | 24 |
| 1 Identify standard verb forms. 2 Identify inappropriate shifts in verb tense. 3 Identify agreement between subject and verb. 4 Identify agreement between pronoun and antecedent. 5 Identify inappropriate pronoun shifts. 6 Identify clear pronoun references. 7 Identify proper case forms. 8 Identify the correct use of adjectives and adverbs. 9 Identify appropriate comparative and superlative degree forms. 10 Identify standard spelling. 11 Identify standard punctuation. 12 Identify standard capitalization. | |

Table of Competencies, Skills, and Number of Items

| Competency/Skill | Items |
|--|------------------|
| <p>MATHEMATICS</p> <p>The test center will provide a 4-function calculator.</p> <p>The test center will provide a reference sheet.</p> | |
| <p>1 Number Sense, Concepts, and Operations</p> | <p>8</p> |
| <p>1 Compare the relative value of real numbers (e.g., integers, fractions, decimals, percents, irrational numbers, and numbers expressed in exponential or scientific notation).</p> <p>2 Solve real-world problems involving addition, subtraction, multiplication, and division of rational numbers (e.g., whole numbers, integers, decimals, percents, and fractions including mixed numbers).</p> <p>3 Apply basic number theory concepts including the use of primes, composites, factors, and multiples in solving problems.</p> <p>4 Apply the order of operations with or without grouping symbols.</p> | |
| <p>2 Measurement (using customary or metric units)</p> | <p>10</p> |
| <p>1 Solve real-world problems involving length, weight, mass, perimeter, area, capacity, and volume.</p> <p>2 Solve real-world problems involving rated measures (e.g., miles per hour, meters per second, cost per item, and cost per unit).</p> <p>3 Solve real-world problems involving scaled drawings (e.g., maps, blueprints, and models).</p> <p>4 Solve real-world problems involving the change of units of measures of length, weight, mass, capacity, and time.</p> <p>5 Solve real-world problems involving estimates of measures including length, weight, mass, temperature, time, money, perimeter, area, and volume.</p> <p>6 Choose the correct reading, to a specified degree of accuracy, using instruments (e.g., scales, rulers, thermometers, measuring cups, protractors, and gauges).</p> | |

| Competency/Skill | Items |
|---|----------|
| 3 Geometry and Spatial Sense | 9 |
| <ol style="list-style-type: none"> 1 Identify and/or classify simple two- and three-dimensional figures according to their properties. 2 Solve real-world and mathematical problems involving ratio, proportion, similarity, congruence, and the Pythagorean relationship. 3 Identify the location of ordered pairs of integers in all four quadrants of a coordinate system (graph) and use the coordinate system to apply the concepts of slope and distance to solve problems. 4 Identify real-world examples that represent geometric concepts including perpendicularity, parallelism, tangency, symmetry, and transformations (e.g., flips, slides, and turns). | |
| 4 Algebraic Thinking | 9 |
| <ol style="list-style-type: none"> 1 Analyze and generalize patterns including arithmetic and geometric sequences. 2 Interpret algebraic expressions using words, symbols, variables, tables, and graphs. 3 Solve equations and inequalities graphically or algebraically. 4 Determine whether a number or ordered pair is among the solutions of given equations or inequalities. | |
| 5 Data Analysis and Probability | 9 |
| <ol style="list-style-type: none"> 1 Analyze data and solve problems using data presented in histograms, bar graphs, circle graphs, pictographs, tables, and charts. 2 Identify how the presentation of data can lead to different or inappropriate interpretations. 3 Calculate range, mean, median, and mode(s) from sets of data and interpret the meaning of the measures of central tendency (i.e., mean, median, and mode) and dispersion (i.e., range and standard deviation). 4 Identify how the measures of central tendency (i.e., mean, median, or mode) can lead to different interpretations. 5 Calculate the probability of a specified outcome. 6 Solve and interpret real-world problems involving probability using counting procedures, tables, tree diagrams, and the concepts of permutations and combinations. | |

Table of Competencies, Skills, and Number of Items

| Competency/Skill | |
|---|--|
| READING All items are passage based. The passages will be both expository and narrative. Each test form will contain four passages. | |
| 1 | Literal Comprehension Skills |
| | <ol style="list-style-type: none">1 Recognize main ideas.2 Identify supporting details.3 Determine meaning of words or phrases in context. |
| 2 | Inferential Comprehension Skills |
| | <ol style="list-style-type: none">1 Determine purpose.2 Identify overall organizational pattern.3 Distinguish between fact and opinion.4 Recognize bias.5 Recognize tone.6 Determine relationships between sentences.7 Analyze the validity of arguments.8 Draw logical inferences and conclusions. |



Test Format and Sample Questions

The General Knowledge Test consists of four subtests: Essay, English Language Skills, Mathematics, and Reading. You will have three-and-one-half hours to complete the test.

You will receive test booklets that contain the essay topics and multiple-choice questions. The answer booklet includes lined paper for your essay and a grid for answers to the multiple-choice questions.

The Essay

For your essay, you will choose between two topics. The 50 minutes allotted for this section of the exam includes time to prepare, write, and edit your essay.

Your work will be scored holistically by two judges. The personal views you express will not be an issue; however, the skill with which you express those views, the logic of your arguments, and the degree to which you support your position will be very important in the scoring. Your essay will be scored both on substance and on the composition skills demonstrated.

The judges will use the criteria on pages 14-15 when evaluating your essay.

Multiple-Choice Subtests

The English Language Skills and Reading subtests are each 40 minutes long and consist of approximately 40 multiple-choice questions per subtest. The Mathematics Subtest consists of approximately 45 multiple-choice questions and is 80 minutes long.

Each multiple-choice question will contain three or four response options, and you will record your selection by bubbling in **A**, **B**, **C**, or **D** on the answer sheet. For the Mathematics Subtest, the test center will provide a 4-function calculator and a mathematics reference sheet.

The following sections explain procedures for each part of the test and direct you to examples of each type of question among the sample items on pages 18 through 41.

GENERAL KNOWLEDGE TEST – ESSAY WRITING
GENERAL STRATEGIES FOR WRITING THE ESSAY FOR
THE GENERAL KNOWLEDGE TEST

1. **Watch the time.** Take a few minutes at the beginning of the period to plan your essay and at the end to proofread or revise your work. Use *all* the time wisely. You should not run out of time before you are done; nor should you write an incomplete essay because you did not use all the time allowed. **NOTE:** You do not have time to write a rough draft and then completely rewrite it. Spend your time writing and editing your final essay.
2. **Read the instructions carefully and select one of the topics.** Determine what the topic is asking. Think of how the topic relates to what you know, what you have learned, and what experiences you have had, so you can provide concrete details rather than vague generalities.
3. **Take a few minutes to prewrite.** Jot down your first ideas (some you may like; others you may discard). Sketch a quick outline or group your ideas together with arrows or numbers. Begin to “see” your essay taking shape—even before you start writing.
4. **Write a thesis statement that provides a clear focus for your essay.** State a point of view in your thesis that guides the purpose and scope of your essay. Consider the larger point you are trying to convey to the reader and what you want the reader to understand about the topic. Avoid a thesis statement framed as a statement of fact, a question, or an announcement.
5. **Develop the essay according your purpose.** Develop paragraphs fully to give the reader examples and reasons that support your thesis. Indent each new paragraph. Note that a good essay for the General Knowledge Test may be longer or shorter than the basic five-paragraph format of some short essays. Do not limit yourself to an arbitrary length. The key is to develop a topic by using concrete, informative details.
6. **Tie your main ideas together with a brief conclusion.** Provide a concluding paragraph that ties together the essay’s points and offers insights about the topic. Avoid a conclusion that merely restates the thesis and repeats the supporting details. Check your time. If the writing period is almost over, wrap up quickly, so you can proofread or revise.

-
-
7. **Revise/proofread the essay to conform to standard American English usage.** Look for particular errors *you* tend to make. Read each sentence from the last sentence to the first. Mark out errors and correct them. You will never be penalized for clearly crossing out errors. Look for words, sentences, or even paragraphs that need changing. Write legibly so that the reader knows what you have written.

SCORING CRITERIA FOR THE GENERAL KNOWLEDGE ESSAY

- SCORE of 6** The paper has a clearly established main idea that the writer fully develops with specific details and examples. Organization is notably logical and coherent. Point of view is consistently maintained. Vocabulary and sentence structure are varied and effective. Errors in sentence structure, usage, and mechanics are few and insignificant.
- SCORE of 5** The paper has a clearly established main idea that is adequately developed and recognizable through specific details and/or examples. Organization follows a logical and coherent pattern. Point of view is mostly maintained. Vocabulary and sentence structure are mostly varied and effective. Occasional errors in sentence structure, usage and mechanics do not interfere with the writer's ability to communicate.
- SCORE of 4** The paper has an adequately stated main idea that is developed with some specific details and examples. Supporting ideas are presented in a mostly logical and coherent manner. Point of view is somewhat maintained. Vocabulary and sentence structure are somewhat varied and effective. Occasional errors in sentence structure, usage, and mechanics may interfere with writer's ability to communicate.
- SCORE of 3** The paper states a main idea that is developed with generalizations or lists. The paper may contain occasional lapses in logic and coherence, and organization is mechanical. Point of view is ambiguous. Vocabulary and sentence structure are repetitious and often ineffective. A variety of errors in sentence structure, usage, and mechanics sometimes interferes with the writer's ability to communicate.
- SCORE of 2** The paper presents an incomplete or ambiguous main idea. Support is developed with generalizations and lists. Organization is mechanical. The paper contains occasional lapses in logic and coherence. Point of view is confusing and distracting. Word choice is simplistic, and sentence structure is disjointed. Errors in sentence structure, usage, and mechanics frequently interfere with the writer's ability to communicate.

SCORE of 1 The paper has no evident main idea. Development is inadequate and/or irrelevant. Organization is illogical and/or incoherent. Point of view has not been established. Vocabulary and sentence structure are garbled and confusing. Significant and numerous errors in sentence structure, usage, and mechanics interfere with the writer's ability to communicate.

Table of Question Formats

| Type of question | Sample item |
|--|------------------|
| Essay Select a topic and develop an essay explaining the topic or supporting your position on the topic. | Page 18 |
| Direct question Choose the response option that best answers the question. | Item 2, page 19 |
| Word Problem Apply mathematical principles to solve a real-world problem. | Item 2, page 27 |
| Scenario Examine a situation, problem, or case study. Then answer a question, make a diagnosis, or recommend a course of action by selecting the best response option. | Item 5, page 28 |
| Command Select the best response option. | Item 8, page 29 |
| Graphics Choose the option that best answers a question involving a number line, a geometric figure, graphs of lines or curves, a table, or a chart. | Item 11, page 30 |
| Data Analysis Examine and analyze data from an experiment or study. Then answer a question by selecting the best response option. | Item 18, page 32 |
| Passage Read the passage and select the correct answer. | Item 1, page 34 |
| Sentence Completion Select the response option that best completes the sentence. | Item 4, page 35 |

Sample Items

The following items represent both the form and content of questions you will encounter on the examination. These sample items cannot cover all of the competencies and skills that are tested, and they can only approximate the degree of difficulty of actual examination questions. However, these items will acquaint you with the general format of the test.

Answer keys follow on page 42.

SAMPLE ESSAY TOPICS

DIRECTIONS: Two topics are presented below. Select one of the topics as the basis for your essay. READ THE TOPICS VERY CAREFULLY TO MAKE SURE YOU KNOW WHAT YOU ARE BEING ASKED TO DO.

Topic 1.
An entertainment personality who is a positive or negative role model

OR

Topic 2.
An invention that should never have been created

Read the two topics again and select the one on which you wish to write your essay. In order for your essay to be scored, it must be on only one of these topics, and it must address the entire topic.

In your essay, you should introduce the subject and then either

- explain the subject you have chosen or
- take a position about your subject and support that position.

At least two evaluators will read your essay and assign it a score. They will pay special attention to whether you have observed the following:

- determined the purpose of writing
- formulated a thesis or statement of main idea
- organized ideas and details effectively
- provided adequate, relevant support material
- used effective transitions
- demonstrated a mature command of language
- avoided inappropriate use of slang, jargon, and clichés
- used a variety of sentence patterns effectively
- maintained consistent point of view
- observed the conventions of standard American English

Take a few minutes to plan what you want to say before you start writing. Leave yourself a few minutes at the end of the period to proofread and make corrections.

You may cross out or add information as necessary. Although your handwriting will not affect your score, you should write as legibly as possible so the evaluators can easily read your essay.

Please see pages 12-13 for advice on writing the essay and pages 14-15 for the essay scoring criteria.

ENGLISH LANGUAGE SKILLS SAMPLE ITEMS

DIRECTIONS: For items 1 and 2, read the entire passage carefully and then answer the questions. (Note: Intentional errors have been included in this passage.)

(1)Florida's citizens face several serious environmental problems that may leave the state with fewer resources in the 21st century. (2)Garbage litters the streets, the beaches, and the waterways. (3)Another problem is the draining of swampland for irrigation of farmland. (4)Even proper disposal of this litter pollutes the state's air, land, and water. (5)The drying up of the swampland reduces the supply of fresh water for South Florida residents; in addition, the alteration of this habitat threatens the survival of aquatic species and waterfowl. (6)A third problem results when offshore drilling fouls the coastlines and kills marine life. (7)Finally, the gravest environmental problem is the rapid rate of urban and suburban development. (8)This development results in excessive demands on the state's natural resources, especially land and water. (9)Moreover, billboards are another source of revenue for the state. (10)Unless citizens and government officials cooperate to address these serious environmental problems, Florida's resources soon may be inadequate to support its growing population.

1. **Select the arrangement of sentences 2, 3, and 4 that provides the most logical sequence of ideas and supporting details in the paragraph. If no change is needed, select option A.**
 - A. Garbage litters the streets, the beaches, and the waterways. Another problem is the draining of swampland for irrigation of farmland. Even proper disposal of this litter pollutes the state's air, land, and water.
 - B. Garbage litters the streets, the beaches, and the waterways. Even proper disposal of this litter pollutes the state's air, land, and water. Another problem is the draining of swampland for irrigation of farmland.
 - C. Another problem is the draining of swampland for irrigation of farmland. Even proper disposal of this litter pollutes the state's air, land, and water. Garbage litters the streets, the beaches, and the waterways.
 - D. Even proper disposal of this litter pollutes the state's air, land, and water. Garbage litters the streets, the beaches, and the waterways. Another problem is the draining of swampland for irrigation of farmland.

2. **Which numbered sentence is LEAST relevant to the passage?**
 - A. sentence 7
 - B. sentence 8
 - C. sentence 9
 - D. sentence 10

3. Choose the most appropriate word to complete the sentence.

Although down by 21 points at halftime, the football team _____ and won by a field goal.

- A. intervened
- B. persisted
- C. relented

DIRECTIONS: For items 4-17, choose the option that corrects an error in an underlined portion. If no error exists, choose "No change is necessary."

4. Everyone except the principal is suppose to attend the meeting.

A B C

- A. accept
- B. principle
- C. supposed to
- D. No change is necessary.

5. Basketball players clearly need speed, physical size, and endurance;

A

however, without quick thinking, they will not be effective team members.

B C

- A. speed physical size
- B. however without
- C. thinking; they
- D. No change is necessary.

6. Students in Professor Garcia's algebra class should seek help in the Johnson

A B

Learning Center, located in the west end of the building.

C

- A. professor Garcia's
- B. Algebra
- C. West
- D. No change is necessary.

7. In *The Joy Luck Club*, a national best-seller. Amy Tan explores the world of Chinese-American families, and we realize how similar all families are.

A B
C

- A. Club a national
- B. best-seller, Amy
- C. families and
- D. No change is necessary

8. Because the teacher had assigned a research paper, the student should have went to the library instead of watching television.

- A. have gone
- B. had went
- C. of gone
- D. No change is necessary.

9. Since its founding over a decade ago, Habitat for Humanity helped to build homes for the poor throughout the country.

- A. helps
- B. is helping
- C. has helped
- D. No change is necessary.

10. The report that covers the results of several months of investigation are in the blue folder that the clerk has already filed.

A B
C

- A. cover
- B. is
- C. have
- D. No change is necessary.

-
11. One of the boys in the class were on the team that has already finished the tasks that were assigned.
A B C
- A. was
B. have
C. was
D. No change is necessary.
12. Residents and their state representative are concerned about pollution of the coastal areas. As urban development increases, they fear the sea turtles will lose its habitat.
A B C
- A. his.
B. he fears
C. their
D. No change is necessary.
13. A tourist can travel to Costa Rica by flying from Miami to the capital, San José, and once there, they can rent a car.
- A. she
B. you
C. we
D. No change is necessary.
14. My little sister sat between Andra and me as we watched the basketball team defend its title.
A B C
- A. I
B. us
C. it
D. No change is necessary.

19. Choose the sentence in which the modifiers are correctly placed.

- A. Paul bought a donut from the local bakery filled with his favorite fruit.
- B. Filled with his favorite fruit, Paul bought a donut from the local bakery.
- C. Paul bought a donut filled with his favorite fruit from the local bakery.

20. Choose the sentence that is correctly punctuated.

- A. The mens floors, in three dormitories were repainted by the time school started in August.
- B. The men's floors in three dormitories' were repainted, by the time school started in August.
- C. The mens' floors in three dormitories were repainted by the time school started in August.
- D. The men's floors in three dormitories were repainted by the time school started in August.

Mathematics Reference Sheet

AREA



Triangle $A = \frac{1}{2}bh$



Rectangle $A = lw$



Trapezoid $A = \frac{1}{2}h(b_1 + b_2)$



Parallelogram $A = bh$

Circle $A = \pi r^2$

Circumference

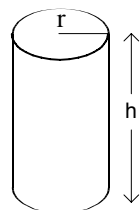
$$C = \pi d = 2\pi r$$

| KEY | |
|---------------------|-------------------|
| b = base | d = diameter |
| h = height | r = radius |
| l = length | A = area |
| w = width | C = circumference |
| S.A. = surface area | V = volume |
| | B = area of base |

Use 3.14 or $\frac{22}{7}$ for π

Surface Area

1. Surface area of a prism or pyramid equals the sum of the areas of all faces.
2. Surface area of a cylinder equals the sum of the bases and its rectangular wrap.



$$\text{S.A.} = 2(\pi r^2) + 2(\pi r)h$$

3. Surface area of a sphere: $\text{S.A.} = 4\pi r^2$

Volume

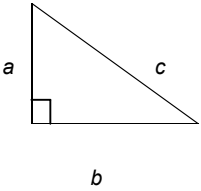
1. Volume of a prism or cylinder equals the Area of the Base (B) times the height (h).

$$V = Bh$$

2. Volume of a pyramid or cone equals $\frac{1}{3}$ times the Area of the Base (B) times the height (h).

$$V = \frac{1}{3}Bh$$

3. Volume of a sphere: $V = \frac{4}{3}\pi r^3$

| | |
|---|---|
| <p>Pythagorean theorem: $a^2 + b^2 = c^2$</p>  | <p>Given a line containing points (x_1, y_1) and (x_2, y_2)</p> <ul style="list-style-type: none"> ◆ Slope of line $\frac{y_2 - y_1}{x_2 - x_1}$ ◆ Distance between two points $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ ◆ Midpoint between two points $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$ |
| <p>Simple interest formula: $I = prt$</p> <p>I = simple interest, p = principal r = rate, t = time</p> | |
| <p>Distance formula: $d = rt$</p> <p>d = distance, r = rate, t = time</p> | |

Conversions

1 yard = 3 feet = 36 inches
1 mile = 1,760 yards = 5,280 feet
1 acre = 43,560 square feet
1 hour = 60 minutes
1 minute = 60 seconds

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts
1 pound = 16 ounces
1 ton = 2,000 pounds

1 liter = 1000 milliliters = 1000 cubic centimeters
1 meter = 100 centimeters = 1000 millimeters
1 kilometer = 1000 meters
1 gram = 1000 milligrams
1 kilogram = 1000 grams

Metric numbers with four digits are presented without a comma (e.g., 9960 kilometers)
For metric numbers greater than four digits, a space is used instead of a comma (e.g., 12 500 liters).

MATHEMATICS SAMPLE ITEMS

DIRECTIONS: Read each item and select the best response.

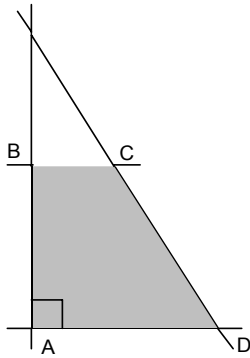
1. Order the following series of numbers from smallest to largest.

$$2^3, \sqrt{73}, 3^2, \frac{13}{2}$$

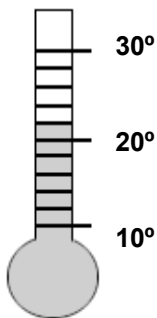
- A. $\sqrt{73}, 2^3, 3^2, \frac{13}{2}$
- B. $\frac{13}{2}, 2^3, 3^2, \sqrt{73}$
- C. $2^3, 3^2, \frac{13}{2}, \sqrt{73}$
- D. $\frac{13}{2}, 2^3, \sqrt{73}, 3^2$
2. A motor home rents for \$220 per week plus \$0.25 per mile. Find the rental cost for a 2-week trip of 500 miles for a family of 5.
- A. \$ 345.00
- B. \$ 565.00
- C. \$2200.00
- D. \$2825.00
3. Find the greatest common factor of 42 and 70.
- A. 2
- B. 4
- C. 7
- D. 14
4. Simplify:
- $$8 - 4 \div 2 - 10 \div 2$$
- A. 4
- B. 1
- C. -3
- D. -4

-
5. **Rodrigo wants to paint the walls and ceiling in a room that is 14 feet x 16 feet with an 8-foot-high ceiling. He will not paint the double door, which has a measurement of 6 feet x 7 feet. One gallon of paint will cover 350 square feet. The paint is sold in gallon containers only. How many gallons of paint will he need to buy?**
- A. 2 gallons
 - B. 3 gallons
 - C. 4 gallons
 - D. 5 gallons
6. **On a map, the distance between two cities is 8.5 inches. If $\frac{1}{2}$ inch represents 25 miles, how far, in miles, is it between the two cities (to the nearest mile)?**
- A. 106 miles
 - B. 213 miles
 - C. 425 miles
 - D. 850 miles
7. **Alicia wants to buy a carpet that is 12 feet x 15 feet. The cost of the carpet, including installation, is \$29.90 per square yard. Without including tax, how much does Alicia have to spend to carpet her room?**
- A. \$ 598.00
 - B. \$ 807.30
 - C. \$ 1614.60
 - D. \$ 5322.00

8. Select the most specific name for figure ABCD.

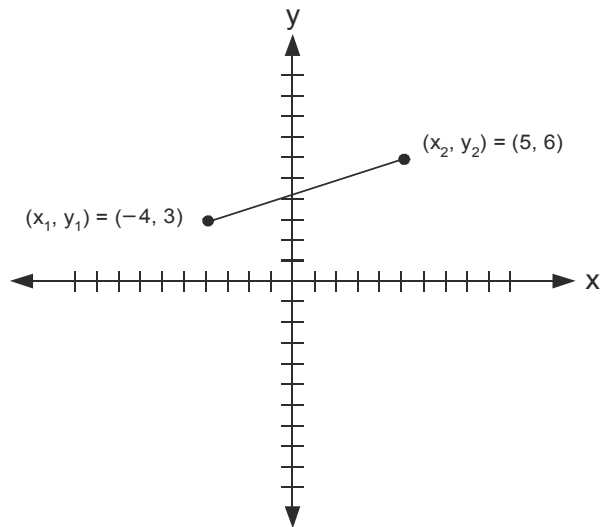


- A. square
 - B. rectangle
 - C. parallelogram
 - D. trapezoid
9. A radio station is going to construct a 12-foot tower for a new antenna on top of a tall building. The tower will be supported by three cables, each attached to the top of the tower and to points on the roof of the building which are 5 feet from the base of the tower. What is the total length of these three cables?
- A. 13 feet
 - B. 39 feet
 - C. 42 feet
 - D. 51 feet
10. What is the temperature to the nearest degree?



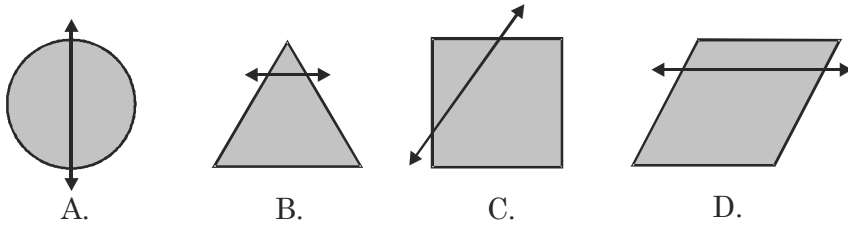
- A. 20.5°
- B. 21°
- C. 22°
- D. 24°

11. Find the slope of line segment AB.



- A. -3
- B. $-\frac{1}{3}$
- C. $\frac{1}{3}$
- D. 3

12. Which of the following geometric objects contains a correctly drawn line of symmetry?



13. Find the missing number in the following sequence.

2, ____, 18, -54, 162

- A. 6
- B. 3
- C. -3
- D. -6

14. Kinetic Energy (KE) is calculated by the formula $KE = \frac{1}{2} mv^2$ where m is mass and v is velocity. Translate the expression $\frac{1}{2} mv^2$ into words.

- A. half the product of m times v times v
- B. the quantity of half the mass times velocity, all squared
- C. half the square root of mass times velocity
- D. half the square of the quantity of mass times velocity

15. Solve for x

$$3(x + 4) = 6$$

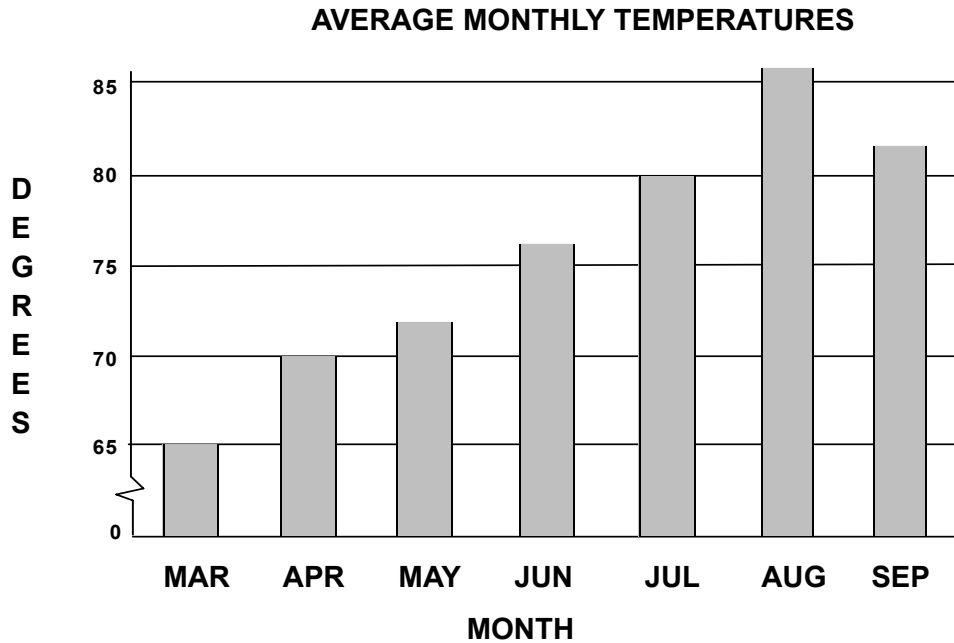
- A. - 2
- B. $\frac{2}{3}$
- C. $\frac{10}{3}$
- D. 6

16. Determine which of the ordered pairs listed below satisfies the given system.

$$\begin{aligned}x + 2y &= 3 \\2x + y &= 6\end{aligned}$$

- A. (0, 3)
- B. (1, 1)
- C. (2, 2)
- D. (3, 0)

17. The graph below represents the monthly average temperature for 7 months of the year. How much higher is the average temperature in July than it is in April?



- A. 3°
B. 5°
C. 10°
D. 15°
18. Given below are students' scores on an essay (possible score range is from 0 to 10). What is the median of the set of scores?

| <u>Student</u> | <u>Essay Score</u> |
|----------------|--------------------|
| A | 8 |
| B | 5 |
| C | 4 |
| D | 2 |
| E | 4 |
| F | 1 |
| G | 7 |
| H | 8 |

- A. 3
B. 4.5
C. 4.9
D. 5

-
19. Given a bag of 20 marbles containing 8 green, 4 red, 2 blue, and 6 yellow, if a person picks out a single marble from the bag without looking, what is the probability that it will be a red marble?
- A. $\frac{1}{20}$
 - B. $\frac{1}{10}$
 - C. $\frac{1}{5}$
 - D. $\frac{1}{4}$
20. A man has a choice of a white, yellow, or blue shirt. He also may select a red tie or a green tie. How many different outfits can he make of 1 shirt and 1 tie?
- A. 5
 - B. 6
 - C. 8
 - D. 9

READING SAMPLE ITEMS

DIRECTIONS: Read the following passage and answer questions 1 through 6.

The martial arts provide a well-rounded and fulfilling way to achieve physical fitness and psychological well-being. Martial arts serve not only as a complete exercise form emphasizing each area of fitness equally but also as a vehicle for stress reduction, increased self-confidence, and improved self-image.

Physical fitness refers to the capacity to perform at an optimal level in three closely related areas: strength, conditioning, and flexibility. Martial arts students are continually motivated to improve in each of these areas in order to better perform the skills associated with their art. For example, in karate, one form of martial arts, bold stances significantly stretch and strengthen the muscles of the legs, while kicking drills improve flexibility and balance, in addition to strengthening the hips and back.

Repetitions of karate hand strikes improve the muscle tone of the arms, shoulders, and upper back as well as enhance coordination and reflexes. Any combination of the above karate skills practiced vigorously over a period of 15 to 20 minutes daily will also provide an excellent aerobic workout and promote muscular endurance.

The physical benefits gained from the practice of martial arts are achieved indirectly through the students' concentration on the improvement of skills; therefore, fitness becomes the byproduct of effort directed toward another goal: self-defense. Certainly, this multifaceted approach to fitness constitutes a more interesting and motivating way to "get in shape" than more traditional forms of working out.

In terms of mental health or psychological well-being, the practice of martial arts is a wonderful method of stress reduction. Furthermore, its emphasis on character development as well as skill development promotes a positive attitude and goal orientation, both of which lead toward greater self-confidence and improved self-image.

Finally, in addition to these physical and psychological benefits, the practice of martial arts also provides valuable self-defense abilities that might at some point become necessary in order to maintain—in a more obvious and literal sense—one's physical well-being in the case of assault or attack. Confidence in the ability to defend oneself reduces the threat of intimidation from others, thus producing another very positive effect on one's psychological well-being.

Improving physical fitness and psychological well-being, acquiring self-defense methods, and emphasizing character development all make martial arts training a popular choice for health advocates worldwide.

1. Which sentence best states the main idea of this passage?
 - A. The martial arts are practiced worldwide by people interested in character development.
 - B. The martial arts provide physical and psychological benefits as well as valuable self-defense techniques.
 - C. The martial arts provide a variety of physical benefits for health enthusiasts.
 - D. The martial arts are a form of physical exercise that should be practiced by most people.

2. **According to the passage, what is one way in which kicking drills contribute to overall well-being?**

- A. improved muscle tone in the arms
- B. strengthened leg muscles
- C. increased coordination
- D. enhanced balance

3. **As used in the second paragraph, the word optimal most nearly means**

- A. high.
- B. positive.
- C. flexible.
- D. basic.

4. **The tone of this passage can be described as**

- A. caustic.
- B. objective.
- C. enthusiastic.
- D. pessimistic.

5. **Identify the relationship between the following two sentences in the fifth paragraph:**

"In terms of mental health or psychological well-being, the practice of martial arts is a wonderful method of stress reduction. Furthermore, its emphasis on character development as well as skill development promotes a positive attitude and goal orientation, both of which lead toward greater self-confidence and improved self-image."

The second sentence

- A. contradicts the first.
- B. restates the first.
- C. redefines the first.
- D. adds to the first.

6. Which word or phrase, when substituted for "Furthermore" in the fifth paragraph, would maintain the same relationship between the two sentences?

- A. In contrast
- B. Therefore
- C. In addition
- D. Obviously

DIRECTIONS: Read the following passage and answer question 7.

During the Great Depression, my parents and I lived with my grandmother, trying to survive on what little money was rescued from the bank before its collapse. At least we didn't lose our home, as did at least 25,000 other families displaced to "Hoovervilles"—shack towns made from crates, boxes, and tin cans.

My father did lose his teaching job, however, joining some 13 million other unemployed who, in 1933, comprised the astonishing 25%-40% unemployment rate nationwide. A resourceful and optimistic soul, he planted a backyard vegetable garden and took charge of planning and cooking meals, buying only such staples as sugar, flour, dried beans, soap, toilet paper, and cereal from the grocery store, and meats, poultry, and eggs from the meat market. Frugal by nature, my father managed to get bargains on bones and organ meats, but since he was such a clever chef anyway, we always had a good meal, even if it was only creamed, spicy, hard-boiled eggs on toast with a vegetable. Frequently, we shared these simple meals with less fortunate homeless people who went door to door, volunteering to work for a hot dinner.

In the late spring, summer, and early fall we would make trips to the countryside to pick and/or buy in quantity berries, grapes, peaches, tomatoes, and apples. My father had fixed up an old stove, which he installed in the basement. There, using a wash kettle, he and my grandmother would can tomatoes, make tomato juice and root beer, and put up jellies and preserves. Although we lived in the highly industrialized city of Cleveland, Ohio, our life resembled that of a farm family living off the land.

Of course, we economized in every way possible. To save on doctors' bills and medicine, we treated ordinary ailments with something called "anti-phlogistine paste," a substance heated up and poured into a cloth, which we then applied to the offending chest cold, sore joint, or headache. To save on the cost of dry goods, my grandmother would rip worn sheets into half, sew the two selvage edges together, and hem the new outside edges. When those split sheets wore out, she would convert the usable material into pillow cases. To save precious gasoline, we walked; even in snowstorms and rain, we walked.

Nothing was wasted--but much was gained. When I compare my stories of the Great Depression with stories of other people who grew up during that difficult time, I am always struck by how the determination and generosity developed in order to survive such adversity rendered insignificant—even inspiring—the great hardships we endured.

7. The primary purpose of the passage is to

- A. entertain with interesting stories about the Great Depression.
- B. illustrate how difficulties during the Great Depression built character.
- C. argue the benefits of saving money during the Great Depression.
- D. identify the causes and effects of the Great Depression.

DIRECTIONS: Read the following passage and answer questions 8 through 11.

Although those who advocate a back-to-basics approach in education are chided as being reactionary and uninformed, their idea that certain knowledge, information, and critical thinking skills need to precede other courses and disciplines is a concept that certainly can be defended. Among the more important basic skills a student needs to have—and have as early as the first years of elementary school—is an understanding of grammar. While studies are often cited to prove that grammar is not successfully taught apart from writing, I dispute those studies on the basis of my own extensive experience as a college teacher.

First of all, grammar is not difficult. It is simple for a student to understand, for example, that breaking down compound constructions helps to determine the correct pronoun usage. "Bob and me went to the movies," therefore, is clearly wrong. If "Bob" is removed, the sentence reads "Me went to the movies," an unlikely construction indeed. The truth is, much grammar is this easy, and once students learn to have command of the rules and the usage, they feel empowered.

Many writing teachers maintain that students need "freewriting" and other such exercises to unblock their ideas; on the contrary, I maintain that students frequently clam up when they feel their prose is error-ridden. Under such circumstances, they become self-conscious and afraid to express themselves at all. Over the years, I have had many students say that knowing grammatical rules has in fact freed them to write without fear. Grammar stimulates creativity by giving students confidence that they will say things "right."

As unlikely as it might seem, grammar also provides a solid foundation for other thinking skills. There is a logic and beauty to the language that students come to appreciate; they benefit, too, by making some of the fine distinctions required in analyzing whether, for example, "The lock was broken" is in passive voice or is instead an instance of a participle functioning as a predicate adjective. Believe it or not, I have had some very lively class discussions because of that sentence. Students also marvel that one comma can actually reverse the meaning of a sentence, as in the example of "They didn't get married because they wanted their freedom," as opposed to "They didn't get married, because they wanted their freedom." The difference in meaning is substantial and definite. Students love it.

Frankly, I believe that grammar is currently in disrepute because so many teachers have forgotten the rules of grammar—that, or they find the subject less interesting than another approach; consequently, they *cannot* teach it. Unfortunately, this educational impasse leaves us with generation after generation of students who learn that their frustration with writing stems from being "blocked" rather than from being inadequately informed.

8. For this passage the author uses an overall organizational pattern that
- A. provides illustrations that support the teaching of grammar.
 - B. contrasts views concerning the value of teaching grammar.
 - C. outlines proper steps for teaching grammar.
 - D. summarizes many years of teaching grammar.

9. This passage illustrates bias in favor of

- A. teaching students grammar instead of writing.
- B. encouraging students to "freewrite" to unblock their ideas.
- C. teaching grammar to young students.
- D. making grammar rules more difficult for college students.

10. This passage illustrates bias against

- A. using "freewriting" to unblock ideas.
- B. stressing the importance of punctuation.
- C. requiring students to know the rules of language.
- D. teaching writing skills to college students.

11. The author's claim that "grammar is currently in disrepute" (paragraph 5) is

- A. valid because the author makes logical comparisons.
- B. valid because the author relates personal beliefs and experiences.
- C. invalid because the point is irrelevant in the discussion.
- D. invalid because insufficient factual evidence is presented.

DIRECTIONS: Read the following passage and answer questions 12 and 13.

On January 24, 1993, retired justice of the Supreme Court Thurgood Marshall, 84, died of heart failure. The media marked his passing with eulogies, testimonials, remembrances, and biographies. These usually began, "The first black justice on the Supreme Court"; and if this alone were his only accomplishment, it would have earned him a place in history. But his legacy was guaranteed more by his presence in front of the bench than behind it. Thurgood Marshall, attorney-at-law, was creator of the civil rights legislation that took the movement from marches in the street to the law of the land.

The significance of an event is easier to see in retrospect than it is while the event is occurring. The high school teacher who made Marshall read the Constitution out loud as a punishment could never have foreseen the irony of the act. Marshall's intimate familiarity with the Constitution enabled him to emerge successfully from the antagonistic nomination hearings in Congress years later. In college, the biology teacher who clashed with Marshall could not have known that by discouraging a would-be dentist, he was creating a dynamic attorney. And likewise, college classmates like Langston Hughes, who would become a writer; Cab Calloway, who would entertain millions; and Nnamdi Azikiew, who would become president of Nigeria, could not know what they started when they goaded their friend to join them in a vote for the integration of their college's faculty.

Marshall graduated from Lincoln College in 1930 and went on to graduate from Howard University's law school. After struggling in private practice, he was hired as an assistant attorney for the NAACP. In Texas, he obtained protection for black jurors. In Maryland, he located a college graduate who had been denied admission into the University of Maryland's all-white law school—as Marshall himself had been denied—and took the University to court. Marshall's eloquence won the case at the local level even though he anticipated having to take the case to the Supreme Court.

Eventually, Marshall did argue cases in front of the Supreme Court. Many were on behalf of the NAACP, an organization for which Marshall won 29 out of 32 cases. Later, under President Lyndon Johnson, Marshall argued as Solicitor General. His legal acumen was responsible for the Supreme Court's decision that made segregation on buses illegal, a precedent that paved the way for the successful Montgomery, Alabama, boycott led by Reverend Martin Luther King, Jr. As Solicitor General, Marshall argued the case that resulted in the Miranda rule, which requires that suspects be informed of their rights. The most famous case that Marshall argued before the Supreme Court was the landmark *Brown versus Board of Education*, which legally ended segregation in schools.

Outspoken and articulate, Thurgood Marshall worked essentially behind the scenes, unlike other leaders in the civil rights movement. But without his expertise and willingness to face prejudice and fear head-on in the courtroom, the movement could have died. It took the force of law to enable the drive for equality to gain momentum.

12. Which sentence is a statement of opinion?

- A. Marshall graduated from Lincoln College in 1930 and went on to graduate from Howard University's law school.
- B. The significance of an event is easier to see in retrospect than it is while the event is occurring.
- C. The media marked his passing with eulogies, testimonials, remembrances, and biographies.
- D. Eventually, Marshall did argue cases in front of the Supreme Court.

13. What does the following sentence from the second paragraph suggest about Thurgood Marshall?

"Marshall's intimate familiarity with the Constitution enabled him to emerge successfully from the antagonistic nomination hearings in Congress years later."

- A. He was antagonistic toward government.
- B. He served in Congress for many years.
- C. He studied the Constitution thoroughly.
- D. He disagreed with the appointment process.

Answer Keys

English Language Skills

| | | |
|------|-------|-------|
| 1. B | 8. A | 15. A |
| 2. C | 9. C | 16. A |
| 3. B | 10. B | 17. A |
| 4. C | 11. A | 18. C |
| 5. D | 12. C | 19. C |
| 6. D | 13. A | 20. D |
| 7. B | 14. D | |

Mathematics

| | | |
|------|-------|-------|
| 1. D | 8. D | 15. A |
| 2. B | 9. B | 16. D |
| 3. D | 10. C | 17. C |
| 4. B | 11. C | 18. B |
| 5. A | 12. A | 19. C |
| 6. C | 13. D | 20. B |
| 7. A | 14. A | |

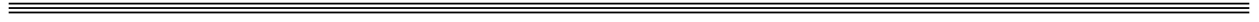
Reading

| | |
|------|-------|
| 1. B | 8. A |
| 2. D | 9. C |
| 3. A | 10. A |
| 4. C | 11. D |
| 5. D | 12. B |
| 6. C | 13. C |
| 7. B | |



5 Test-Taking Advice

- Go into the examination prepared, alert, and well rested.
- Complete your travel arrangements prior to the examination date. Plan to arrive early so that you can locate the parking facilities and examination room without rushing.
- Dress comfortably and bring a sweater or jacket in case the room is too cool.
- Take the following with you to the test site:
 - Admission ticket
 - Picture identification
 - Watch
 - Money for lunch and change for vending machines
- There are many strategies for taking a test and different techniques for dealing with different types of questions. Nevertheless, you may find the following general suggestions useful.
 - Read each question and all the response options carefully before marking your answer. Pay attention to all of the details.
 - Go through the entire test once and answer all the questions you are reasonably certain about. Then go back and tackle the questions that require more thought.
 - Check periodically to be sure that you are correctly coding your answers on the answer sheet. When you answer a question out of sequence, be certain that the number of the circle you mark on your answer sheet corresponds to the proper question number in the test booklet.
 - When you are not certain of the right answer, eliminate as many options as you can and choose the response that seems best. It is to your advantage to answer all the questions on the test, even if you are uncertain about some of your choices.
 - Be certain to mark your answers clearly on the answer sheet. If you change an answer, erase the first pencil mark completely. Also make sure there are no stray marks on the answer sheet.
 - After completing the examination, go back and check every question. Verify that you have answered all of the questions and that your responses are correctly entered.





Additional Information

Write to the following address to request an FTCE registration bulletin. You may also request information on test administration, retakes, and score reports, or offer comments about this test preparation guide.

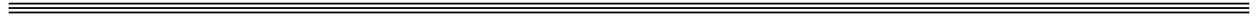
FTCE Inquiries
Florida Department of Education
325 West Gaines Street, Suite 414
Tallahassee, Florida 32399-0400

Write to the address below for an order form and price list if you wish to order additional copies of this test preparation guide or guides for subject area tests, the Professional Education Test, or the Florida Educational Leadership Examination.

Test Preparation Guides / USF
The Institute for Instructional Research and Practice
HMS 401
4202 Fowler Avenue
Tampa, Florida 33620-8360

Refer to the following Web site for additional FTCE information including upcoming test dates, test registration, pass/fail status, and score reports.

www.cefe.usf.edu



| | |
|--|-----|
| | 082 |
|--|-----|