

SAT Practice Test #8



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ESSAY

Time — 25 minutes

Turn to page 2 of your answer sheet to write your ESSAY.

The essay gives you an opportunity to show how effectively you can develop and express ideas. You should, therefore, take care to develop your point of view, present your ideas logically and clearly, and use language precisely.

Your essay must be written on the lines provided on your answer sheet—you will receive no other paper on which to write. You will have enough space if you write on every line, avoid wide margins, and keep your handwriting to a reasonable size. Remember that people who are not familiar with your handwriting will read what you write. Try to write or print so that what you are writing is legible to those readers.

You have twenty-five minutes to write an essay on the topic assigned below. **DO NOT WRITE ON ANOTHER TOPIC. AN OFF-TOPIC ESSAY WILL RECEIVE A SCORE OF ZERO.**

Think carefully about the issue presented in the following excerpt and the assignment below.

Traditionally the term “heroism” has been applied to those who have braved physical danger to defend a cause or to protect others. But one of the most feared dangers people face is that of disapproval by their family, peers, or community. Sometimes acting courageously requires someone to speak out at the risk of such rejection. We should consider those who do so true heroes.

Assignment: Should heroes be defined as people who say what they think when we ourselves lack the courage to say it? Plan and write an essay in which you develop your point of view on this issue. Support your position with reasoning and examples taken from your reading, studies, experience, or observations.

DO NOT WRITE YOUR ESSAY IN YOUR TEST BOOK. You will receive credit only for what you write on your answer sheet.

BEGIN WRITING YOUR ESSAY ON PAGE 2 OF THE ANSWER SHEET.

**If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.**

SECTION 2
Time — 25 minutes
18 Questions

Turn to Section 2 (page 4) of your answer sheet to answer the questions in this section.

Directions: This section contains two types of questions. You have 25 minutes to complete both types. For questions 1-8, solve each problem and decide which is the best of the choices given. Fill in the corresponding circle on the answer sheet. You may use any available space for scratchwork.

Notes

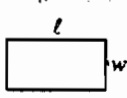
- The use of a calculator is permitted.
- All numbers used are real numbers.
- Figures that accompany problems in this test are intended to provide information useful in solving the problems. They are drawn as accurately as possible EXCEPT when it is stated in a specific problem that the figure is not drawn to scale. All figures lie in a plane unless otherwise indicated.
- Unless otherwise specified, the domain of any function f is assumed to be the set of all real numbers x for which $f(x)$ is a real number.

Reference Information

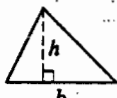


$$A = \pi r^2$$

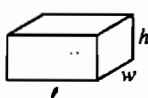
$$C = 2\pi r$$



$$A = lw$$



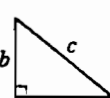
$$A = \frac{1}{2}bh$$



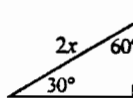
$$V = lwh$$



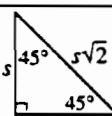
$$V = \pi r^2 h$$



$$c^2 = a^2 + b^2$$



Special Right Triangles



The number of degrees of arc in a circle is 360.

The sum of the measures in degrees of the angles of a triangle is 180.

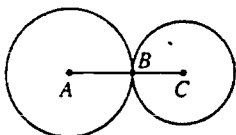
1. The total cost of 3 equally priced mechanical pencils is \$4.50. If the cost per pencil is increased by \$0.50, how much will 5 of these pencils cost at the new rate?

- (A) \$7.50
(B) \$8.00
(C) \$9.00
(D) \$9.50
(E) \$10.00

x	1	2	3	4
y	3	7	11	15

2. The table above represents a relationship between x and y . Which of the following linear equations describes the relationship?

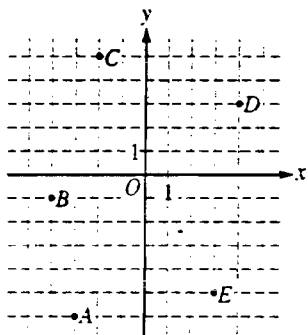
- (A) $y = x + 1$
(B) $y = x + 4$
(C) $y = 3x$
(D) $y = 4x$
(E) $y = 4x - 1$



Note: Figure not drawn to scale.

3. In the figure above, the two circles are tangent at point B and $AC = 6$. If the circumference of the circle with center A is twice the circumference of the circle with center C , what is the length of \overline{BC} ?

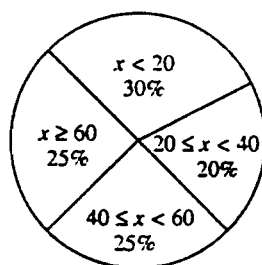
(A) 1
(B) 2
(C) 3
(D) 4
(E) 6



4. Which of the lettered points in the figure above has coordinates (x, y) such that $|x| - |y| = 3$?

(A) A
(B) B
(C) C
(D) D
(E) E

SURVEY RESULTS



5. The chart above shows the results when 1,000 people were asked, "How old are you?" The age they gave is represented by x . How many people said that their age was less than 40?

(A) 200
(B) 300
(C) 450
(D) 500
(E) 550

6. Which of the following could be the remainders when 4 consecutive positive integers are each divided by 3?

(A) 1, 2, 3, 1
(B) 1, 2, 3, 4
(C) 0, 1, 2, 3
(D) 0, 1, 2, 0
(E) 0, 2, 3, 0

7. If y is inversely proportional to x and $y = 15$ when $x = 5$, what is the value of y when $x = 25$?

- (A) $\frac{1}{5}$
- (B) $\frac{1}{3}$
- (C) 3
- (D) 5
- (E) 75

8. If $2x + z = 2y$ and $2x + 2y + z = 20$, what is the value of y ?

- (A) 5
- (B) 8
- (C) 10
- (D) 15
- (E) It cannot be determined from the information given.

Directions: For Student-Produced Response questions 9-18, use the grids at the bottom of the answer sheet page on which you have answered questions 1-8.

Each of the remaining 10 questions requires you to solve the problem and enter your answer by marking the circles in the special grid, as shown in the examples below. You may use any available space for scratchwork.

Answer: $\frac{7}{12}$

Write answer in boxes.

Grid in result.

Answer: 2.5

Answer: 201

Either position is correct.

Note: You may start your answers in any column, space permitting. Columns not needed should be left blank.

- Mark no more than one circle in any column.
- Because the answer sheet will be machine-scored, you will receive credit only if the circles are filled in correctly.
- Although not required, it is suggested that you write your answer in the boxes at the top of the columns to help you fill in the circles accurately.
- Some problems may have more than one correct answer. In such cases, grid only one answer.
- No question has a negative answer.
- Mixed numbers such as $3\frac{1}{2}$ must be gridded as

3.5 or $7/2$. (If $\frac{31}{2}$ is gridded, it will be

interpreted as $\frac{31}{2}$, not $3\frac{1}{2}$.)

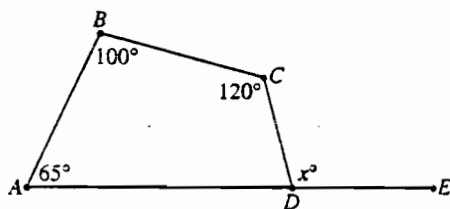
- **Decimal Answers:** If you obtain a decimal answer with more digits than the grid can accommodate, it may be either rounded or truncated, but it must fill the entire grid. For example, if you obtain an answer such as 0.6666..., you should record your result as .666 or .667. A less accurate value such as .66 or .67 will be scored as incorrect.

Acceptable ways to grid $\frac{2}{3}$ are:

9. If $2(x - 3) = 7$, what is the value of x ?

10. Point P lies on the line with equation $y - 4 = 3(x - 2)$. If the x -coordinate of P is 4, what is the y -coordinate of P ?

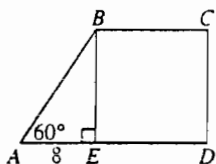
11. Car A traveled 60 miles and averaged 20 miles per gallon of gasoline. If car B traveled 15 miles for each gallon of gasoline it used, how many miles had car B traveled when it had used the same amount of gasoline that car A used to travel 60 miles?



12. In the figure above, points A, D, and E lie on the same line. What is the value of x ?

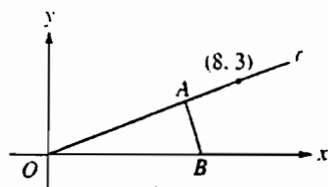
13. The first term of a sequence is 20 and the second term is 8. The third term and each term thereafter is the average (arithmetic mean) of the two terms immediately preceding it. What is the value of the first term in the sequence that is not an integer?

14. If x is $\frac{1}{5}$ of y , y is $\frac{3}{10}$ of z , and $z > 0$, then x is what fraction of z ?



15. In the figure above, $EBCD$ is a square and $AE = 8$. What is the area of $EBCD$?

16. In a mixture of peanuts and cashews, the ratio by weight of peanuts to cashews is 5 to 2. How many pounds of cashews will there be in 4 pounds of this mixture?



17. Line m (not shown) passes through O and intersects \overline{AB} between A and B . What is one possible value of the slope of line m ?

WESTON HIGH SCHOOL ENROLLMENT

Year	Number of Students Enrolled
1992	x
1993	1552
1994	1238
1995	1459
1996	1351

18. The table above shows student enrollment at Weston High School from 1992 through 1996. If the median enrollment for the five years was 1351, and no two years had the same enrollment, what is the greatest possible value for x ?

STOP

If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.

SECTION 3
Time — 25 minutes
35 Questions

Turn to Section 3 (page 4) of your answer sheet to answer the questions in this section.

Directions: For each question in this section, select the best answer from among the choices given and fill in the corresponding circle on the answer sheet.

The following sentences test correctness and effectiveness of expression. Part of each sentence or the entire sentence is underlined; beneath each sentence are five ways of phrasing the underlined material. Choice A repeats the original phrasing; the other four choices are different. If you think the original phrasing produces a better sentence than any of the alternatives, select choice A; if not, select one of the other choices.

In making your selection, follow the requirements of standard written English; that is, pay attention to grammar, choice of words, sentence construction, and punctuation. Your selection should result in the most effective sentence—clear and precise, without awkwardness or ambiguity.

EXAMPLE:

Laura Ingalls Wilder published her first book and she was sixty-five years old then.

- (A) and she was sixty-five years old then
- (B) when she was sixty-five
- (C) at age sixty-five years old
- (D) upon the reaching of sixty-five years
- (E) at the time when she was sixty-five

(A) ● (C) (D) (E)

1. Although several groups strongly opposed the new hiring policies of the city council, other groups being enthusiastic in their support of the new rules.

- (A) being enthusiastic in their support of
- (B) were enthusiastic and supportive of
- (C) enthusiastically supported
- (D) enthusiastically supporting
- (E) are enthusiastically supportive of

2. The problem of water pollution, frequently compounded in certain areas because the treatment and release of industrial wastes are not adequately regulated.

- (A) pollution, frequently compounded in certain areas because
- (B) pollution, frequently compounded in certain areas and
- (C) pollution, frequently compounded in certain areas when
- (D) pollution is frequently compounded in certain areas where
- (E) pollution is frequently compounded in certain areas and

3. Having been a victim of malicious rumors, Helen purposely avoided gossips.

- (A) Having been a victim of malicious rumors,
- (B) Her being a victim of malicious rumors,
- (C) Her having been victimized by malicious rumors,
- (D) Because being a victim of malicious rumors,
- (E) Because having been a victim of malicious rumors,

4. In many states, they have laws to allow students to vote wherever they choose, either at their homes or at their college residences.

- (A) they have laws to allow students to vote wherever
- (B) they have laws allowing students to vote where
- (C) their laws allowing students to vote wherever
- (D) the laws allow students to vote wherever
- (E) the laws allow students to vote in the place where

5. While driving down the road, the house with the large yard and small pond attracted the family's attention.
- the house with the large yard and small pond attracted the family's attention
 - the house having the large yard and a small pond attracted the attention of the family
 - the house with the yard and small pond was attractive to the family's attention
 - the family's attention was attracted by the house with the large yard and small pond
 - the family was attracted to the house with the large yard and small pond
6. The chestnut, like the oak, is called an immortal tree, the reason is that the trunk and roots remain alive even after the tree has been felled.
- tree, the reason is that the trunk and roots remain
 - tree, which has a trunk and roots that are remaining
 - tree, the trunk of which and the roots remain
 - tree because its trunk and roots remain
 - tree, whose trunk and roots are remaining
7. Both Dr. Henderson and Dr. Ball being widely known for having authored numerous articles in their field.
- Both Dr. Henderson and Dr. Ball being widely known for having authored numerous articles in their field.
 - Both Dr. Henderson and Dr. Ball are widely known for having authored numerous articles in their field.
 - Widely known for having authored numerous articles in their field being both Dr. Henderson and Dr. Ball.
 - Having the numerous authored articles in their field widely known are Dr. Henderson and Dr. Ball.
 - Having authored many widely known articles in their field being Henderson and Ball.
8. Scientists are seeking better ways to predict damage from earthquakes, and they are using supersensitive recorders to study how rock breaks and moves in an earthquake.
- Scientists are seeking better ways to predict damage from earthquakes, and they
 - Scientists who seek better ways to predict damage from earthquakes, they
 - Scientists seeking better ways to predict damage from earthquakes
 - Seeking better ways for the prediction of damage from earthquakes, scientists who
 - Seeking to better predict damage from earthquakes is why scientists
9. Some doctors believe that the types of injuries sustained in contact sports are no different for children than young adults.
- are no different for children than young adults
 - is no different for children than being young adults
 - are no different for children than for young adults
 - are no different for children than for those who are young adults
 - are no different from those for children than young adults
10. The reason for the continued popularity of country-western performers is that it draws on experiences with which almost everyone can identify.
- that it draws on
 - that their music draws on
 - because the music draws on
 - because of them drawing from
 - they will draw from
11. Raised in a large and noisy city, it was only when I went away to college that I realized how delightful life in a small town could be.
- it was only when I went away to college that I realized how delightful life in a small town could be
 - when I went away to college I then realized how delightful life in a small town could be
 - going away to college made me realize how delightful life in a small town could be
 - I did not realize how delightful life in a small town could be until I went away to college
 - delightful life in a small town was unrealized by me until I went away to college

The following sentences test your ability to recognize grammar and usage errors. Each sentence contains either a single error or no error at all. No sentence contains more than one error. The error, if there is one, is underlined and lettered. If the sentence contains an error, select the one underlined part that must be changed to make the sentence correct. If the sentence is correct, select choice E. In choosing answers, follow the requirements of standard written English.

EXAMPLE:

The other delegates and him immediately
A B C
accepted the resolution drafted by the
D
neutral states. No error
E

(A) (B) (C) (D) (E)

12. At the heart of the program, enthusiastically endorsed

A

by the city's business association, is plans for

B

refurbishing neighborhoods and for making low-

C

interest mortgages available to young families.

D

No error

E

13. The illustrated books by Dr. Seuss have managed

A

keeping youngsters and adults alike entertained for

B

C

D

several decades. No error

E

14. Introducing new ideas and replacing old ones is

A

B

C

always a highly controversial matter, especially when

D

there is already tension between an older and a younger

generation. No error

E

15. It was fortunate that the inexperienced veterinarian

A

was able to examine the injured horse calm and with

B

C

D

confidence. No error

E

16. Although the details of the contract has not yet been

A

announced, it is likely that union negotiators accepted

B

the proposed training program for newly hired

C

D

workers. No error

E

17. Just when those who were watching from the sidelines

A

feared the worst, the athletes themselves are the

B

C

D

most confident. No error

E

18. Though the statistics on their experiment were

A

B

C

neither precise or significant, the biochemists still

D

published them. No error

E

19. George Thornton Emmons was one of a handful of
A
ethnographers who committed their life to studying
B C D
the Tlingit culture of the Northwest Coast. No error
E

20. Before he sprained his back, Morgan spends
A
much of his leisure time engaged in outdoor sports,
B C
particularly hiking and canoeing. No error
D E

21. In a world that the rate of technological and social
A
change accelerates frighteningly, change itself often
B C
seems to be the only constant. No error
D E

22. Ms. Tanaka asked Juan and I whether we
A B
would consider joining our school's quiz bowl
C D
team. No error
E

23. Something of a phenomenon in the entertainment
A B
world, political satirists are admired by conservatives
C
and radicals alike. No error
D E

24. In the past, the small nation had been committed to
A
self-managed socialism, a system under which the
B
workers, rather than the state, owns most enterprises.
C D
No error
E

25. Listening at the first song its lead singer ever wrote,
A
the band members did not foresee that this young man
B
would be responsible for bringing them
C
to the attention of the world. No error
D E

26. The office manager and her coworker, Ms. Andrews,
received equal pay from the company until she
A B C
got a raise for helping to increase productivity.
D
No error
E

27. Attaining speeds of up to 60 miles per hour, cheetahs
A B
are perhaps the fastest of land animals. No error
C D E

28. Whether or not they were successful as a candidate,
A
women such as Geraldine Ferraro and Pat Schroeder
have opened the door to the election of a woman as
B C D
President. No error
E

29. The often conflicting reports of different polling
A
organizations make it difficult to predict which of the
B
two candidates is more likely to win the election next
C D
year. No error
E

Directions: The following passage is an early draft of an essay. Some parts of the passage need to be rewritten.

Read the passage and select the best answers for the questions that follow. Some questions are about particular sentences or parts of sentences and ask you to improve sentence structure or word choice. Other questions ask you to consider organization and development. In choosing answers, follow the requirements of standard written English.

Questions 30-35 are based on the following passage.

(1) Elisha Graves Otis did not invent the elevator, even though his name is most closely associated with it. (2) Elevating mechanisms, usually ropes and pulleys, had been used throughout history. (3) Otis is also not credited with developing an elevator large enough and powerful enough to lift heavy loads. (4) They had actually been in use for half of his lifetime. (5) What Otis managed to do in 1854 was to demonstrate an elevator with a built-in safety device. (6) So that the elevator would not plunge to the bottom if the rope used to raise and lower it broke. (7) What was noteworthy about this was that it was then possible for people to use elevators, not just freight.

(8) Prior to this time, hotels and other buildings were a maximum of only four or five stories high. (9) You can imagine why. (10) "Birdcage" elevators were made of open metalwork, just like birdcages. (11) Hotel guests were reluctant to climb many flights of stairs several times daily; rooms on the lower floors were considered premium. (12) In businesses, people as well as desks and other heavy equipment had to be moved up stairs. (13) So when Otis' safe elevator was developed, it meant that buildings could be taller. (14) Before long, hotels and office buildings were nine and ten stories high.

30. In context, what is the best way to deal with sentence 4 (reproduced below) ?

They had actually been in use for half of his lifetime.

- (A) Delete it.
- (B) Switch it with sentence 5.
- (C) Change "They" to "Such elevators".
- (D) Change "his" to "Otis'".
- (E) Insert "supposedly" after "lifetime".

31. What is the best way to revise the underlined portion of sentences 5 and 6 (reproduced below) ?

What Otis managed to do in 1854 was to demonstrate an elevator with a built-in safety device. So that the elevator would not plunge to the bottom if the rope used to raise and lower it broke.

- (A) device, by which the elevator would not plunge
- (B) device, and the elevator would not plunge
- (C) device because an elevator plunges
- (D) device to prevent the elevator from plunging
- (E) device, it prevented elevators from plunging

32. Which of the following is the best version of sentence 7 (reproduced below) ?

What was noteworthy about this was that it was then possible for people to use elevators, not just freight.

- (A) (As it is now)
- (B) Consequently, it was then possible for elevators to be used for people and freight, and this was noteworthy.
- (C) People, not just freight, could use elevators; that this was possible was noteworthy.
- (D) This development was noteworthy because elevators could now be used for people as well as for freight.
- (E) It is noteworthy that both people and freight can use elevators.

33. Which of the following is the best sentence to insert at the beginning of the second paragraph before sentence 8 ?

- (A) Freight had always been a major consideration.
- (B) Otis' improvement had far-reaching consequences.
- (C) So Otis' fame was based entirely in safety.
- (D) If Otis had not invented this device, someone else would have.
- (E) Elevators can move more than 1,500 feet per minute.

34. Which of the following is the best version of the underlined portion of sentence 11 (reproduced below) ?

Hotel guests were reluctant to climb many flights of stairs several times daily; rooms on the lower floors were considered premium.

- (A) (as it is now)
- (B) stairs several times daily because rooms on the lower floors
- (C) stairs above the rooms on the lower floors several times daily but they
- (D) stairs several times daily above the rooms on the lower floors, which
- (E) stairs several times daily; as a result, rooms on the lower floors

35. Which sentence should be deleted from the essay because it contains unrelated information?

- (A) Sentence 1
- (B) Sentence 3
- (C) Sentence 8
- (D) Sentence 10
- (E) Sentence 13

STOP

If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.

SECTION 4

Time — 25 minutes

24 Questions

Turn to Section 4 (page 5) of your answer sheet to answer the questions in this section.

Directions: For each question in this section, select the best answer from among the choices given and fill in the corresponding circle on the answer sheet.

Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five words or sets of words labeled A through E. Choose the word or set of words that, when inserted in the sentence, best fits the meaning of the sentence as a whole.

Example:

Hoping to ----- the dispute, negotiators proposed a compromise that they felt would be ----- to both labor and management.

- (A) enforce . . . useful
- (B) end . . . divisive
- (C) overcome . . . unattractive
- (D) extend . . . satisfactory
- (E) resolve . . . acceptable

(A) (B) (C) (D) (E)

1. Once the principal ----- that the fire alarm had been set off by accident, she apologized to the suspected students and announced that they had been -----.
(A) realized . . . exonerated
(B) denied . . . reprimanded
(C) perceived . . . enlightened
(D) understood . . . apprehended
(E) confirmed . . . obligated
2. Although the late Supreme Court Justice Thurgood Marshall had ----- that his papers be available only to scholars, the Library of Congress ----- his wishes and exhibited them to the general public.
(A) implied . . . publicized
(B) denied . . . repealed
(C) stipulated . . . disregarded
(D) revealed . . . executed
(E) insisted . . . honored
3. Royal garments found in the tombs of ancient Egyptians reveal no evidence of having been mended; this discovery suggests that the rulers of Egypt opted for ----- rather than -----.
(A) disposal . . . repair
(B) sacrifice . . . opulence
(C) wastefulness . . . comfort
(D) spirituality . . . worldliness
(E) humiliation . . . charity
4. The author used a rhetorical question as a terminal flourish to ----- the section of text.
(A) disclose (B) rearrange (C) simplify
(D) conclude (E) ascertain
5. "Foamy" viruses cause cells cultured in laboratories to swell but produce no such ----- in cells of living organisms.
(A) compression (B) disintegration
(C) distension (D) deflation
(E) dehydration
6. The two sisters selflessly dedicated their lives to the nursing profession; their ----- made them -----, ones whose ways are worthy of imitation.
(A) aptitude . . . eccentrics
(B) morality . . . emancipators
(C) erudition . . . enigmas
(D) devotion . . . egotists
(E) altruism . . . exemplars
7. Annoyed by the new employee's excessively ----- manner, the supervisor advised him that such fawning was inappropriate.
(A) obsequious (B) mysterious
(C) lackadaisical (D) argumentative
(E) aggressive
8. Conservationists argue that unconstrained ----- of natural resources, which might deplete them forever, should be replaced with a policy of -----.
(A) dismissal . . . preparation
(B) consumption . . . dispersion
(C) harvesting . . . gathering
(D) exploitation . . . husbandry
(E) stockpiling . . . extirpation

Each passage below is followed by questions based on its content. Answer the questions on the basis of what is stated or implied in each passage and in any introductory material that may be provided.

Questions 9-10 are based on the following passage.

Line She set out from Poughkeepsie early this morning —
a six-hour ride, but as they headed north, the snowstorm
started, and the traffic slowed to a crawl. She kept checking
her watch. There was time to spare. Her afternoon class
5 visit was scheduled for four. The presentation itself
wouldn't take place until evening.

Line The talk she has prepared is one she will be delivering
countless times this year, the centennial of her mother's
birth. It is academic, and uninspiring, and she knows it.
10 Other scholars can talk about Salomé's poetry and her
pedagogy, but she, Camila, the only daughter, is sup-
posed to shed a different light on the woman.

9. The character's actions in lines 3-4 ("She . . . watch")
primarily convey her

- (A) fear of traveling in storms
- (B) annoyance at having to make the trip
- (C) concern about arriving on schedule
- (D) eagerness to interact with her colleagues
- (E) excitement about delivering her speech

10. The "light" referred to in line 12 would most likely
include

- (A) bibliographic information
- (B) direct literary citations
- (C) historical analyses
- (D) personal insights
- (E) scholarly critiques

Questions 11-12 are based on the following passage.

Line Summer 1995. School children collecting frogs
from a pond in Minnesota discover one frog after
another with deformities. The story immediately
seizes the attention of national media. Is this an
5 isolated occurrence or a widespread trend? What
is causing these deformities?

Line Malformations have since been reported in more
than 60 species of amphibians in 46 states. Surpris-
ing numbers of deformed amphibians have also been
found in Asia, Europe, and Australia. Investigators
10 have blamed the deformities on amphibians' increased
exposure to ultraviolet radiation, the chemical contam-
ination of water, even a parasite epidemic. Every time
another report appears, the media tout the new position,
15 thus providing a misleading view. Most likely, all of
these factors have been working in tandem.

11. The opening paragraph primarily serves to

- (A) highlight a phenomenon by dramatizing it
- (B) advocate a particular course of action
- (C) illustrate how a story can cause general panic
- (D) compare a local situation to a national one
- (E) demonstrate children's inherent interest in science

12. The author's attitude toward the "media" (line 14)
might best be described as

- (A) respectful
- (B) indifferent
- (C) ambivalent
- (D) resentful
- (E) critical

Questions 13-24 are based on the following passage.

This passage is adapted from a 1993 book written by a scientist.

A physicist, an engineer, and a psychologist are called in as consultants to a dairy farm whose production has been below par. Each is given time to inspect the details of the operation before making a report.

The first to be called is the engineer, who states: "The size of the stalls for the cattle should be decreased. Efficiency could be improved if the cows were more closely packed, with a net allotment of 275 cubic feet per cow. Also, the diameter of the milking tubes should be increased by 4 percent to allow for a greater average flow rate during the milking periods."

The next to report is the psychologist, who proposes: "The inside of the barn should be painted green. This is a more mellow color than brown and should help induce greater milk flow. Also, more trees should be planted in the fields to add diversity to the scenery for the cattle during grazing, to reduce boredom."

Finally, the physicist is called upon. He asks for a blackboard and then draws a circle. He begins: "Assume the cow is a sphere . . ."

This old joke, if not very funny, does illustrate how, at least metaphorically, physicists picture the world. The set of tools physicists have to describe nature is limited. Most of the modern theories you read about began as simple models by physicists who didn't know how else to start to solve a problem. The class of things that we do know how to solve exactly can be counted on the fingers of one, maybe two, hands. For the most part, physicists follow the same guidelines that have helped keep Hollywood movie producers rich: If it works, exploit it. If it still works, copy it.

I like the cow joke because it provides an allegory for thinking simply about the world, and it allows me to jump right into an idea that doesn't get written about too much, but that is essential for the everyday workings of science: *Before doing anything else, abstract out all irrelevant details!*

There are two operative words here: abstract and irrelevant. Getting rid of irrelevant details is the first step in building any model of the world, and we do it subconsciously from the moment we are born. Doing it consciously is another matter. Overcoming the natural desire not to throw out unnecessary information is probably the hardest and most important part of learning physics. This leads us to the second operative word: abstract. Of all the abstract thinking required in physics, probably the most challenging lies in choosing how to approach a problem. The mere description of movement along a straight line—the first major development in modern physics—required enough abstraction that it largely eluded some pretty impressive intellects until Galileo.

Four hundred years ago, Galileo created modern science by describing motion. One of the most obvious traits about the world, which makes a general description of motion apparently impossible, is that everything moves differently. A feather wafts gently down when loosened from a flying bird, but pigeon droppings fall like a rock unerringly on your windshield. Bowling balls rolled haphazardly by a three-year-old serendipitously make their way all the way down the alley, while a lawn mower won't move an inch on its own. Galileo recognized that this most obvious quality of the world is also its most irrelevant, at least as far as understanding motion is concerned. Philosophers before him had argued that a medium—air, water, etc.—is essential to the very existence of motion, but Galileo stated cogently that the essence of motion could be understood only by removing the confusion introduced by the particular circumstances in which moving objects find themselves. "Have you not observed that two bodies which fall in water, one with a speed a hundred times greater than that of the other, will fall in air with speeds so nearly equal that one will not surpass the other by as much as one hundredth part?"

He claimed, rightly, that if we ignore the effect of the medium, all objects will fall exactly the same way. Moreover, he anticipated the onslaught of criticism from those who were not prepared for his abstraction by defining the very essence of *irrelevant*: "I trust you will not follow the example of many others who divert the discussion from its main intent and fasten upon some statement of mine which lacks a hairbreadth of the truth and, under this hair, hide the fault of another which is as big as a ship's cable."

This is exactly what he argued that the ancient Greek philosopher Aristotle had done by focusing not on the similarities in the motion of objects but on the differences that are attributable to the effect of a medium. In this sense, a theoretical world in which there was no medium to get in the way was only a "hairbreadth" away from the real one.

13. The engineer, the psychologist, and the physicist respond differently to the situation at the dairy farm because

- (A) they have different mathematical training
- (B) their specific training causes them to approach problems differently
- (C) the psychologist studies the behavior of cows differently than do the engineer and the physicist
- (D) the engineer solves the problem, leaving nothing relevant for the psychologist and the physicist to say
- (E) only the physicist can successfully eliminate from consideration details irrelevant to the problem

14. A likely consequence of implementing the engineer's proposal (lines 5-11) would be that
- (A) large milking tubes would raise the cow's level of discomfort
 - (B) the dairy farm would be forced to increase in size
 - (C) the farm's management would emphasize the humane treatment of animals
 - (D) larger quantities of milk would initially decrease farm profits
 - (E) the dairy farm would be able to accommodate more cows without additional buildings
15. The psychologist's remarks (lines 13-17) are based on the assumption that
- (A) any implied psychological similarity between cows and humans is inappropriate
 - (B) psychology derives insight from current theories of aesthetics
 - (C) individualized attention to cows will yield measurable increases in milk
 - (D) contented cows will produce more milk than bored or anxious ones
 - (E) each cow will respond differently to attempts to increase milk production
16. The "old joke" (line 21) primarily plays which role in the passage?
- (A) Dramatizing an event
 - (B) Arguing a point
 - (C) Introducing a topic
 - (D) Defining key terms at the outset
 - (E) Exposing misleading assumptions immediately
17. The comparison of physicists to Hollywood producers (lines 28-31) implies that Hollywood producers
- (A) do not always know why a film succeeds
 - (B) do not approach their work with the same dedication as physicists
 - (C) are more concerned than physicists with solving practical problems
 - (D) plan their work in a highly systematic fashion
 - (E) are as conscientious in their own ways as physicists are
18. The author suggests that "thinking simply" (line 33) works because
- (A) abstract models are more prone to error than are empirical observations
 - (B) some problems can be solved if details are ignored
 - (C) scientists should adhere closely to the concerns of the public
 - (D) empirical facts can never be successfully modeled
 - (E) events are often self-explanatory
19. The statement in lines 39-41 ("Getting . . . born") implies that
- (A) a human must have a certain degree of ethical development in order to evaluate details appropriately
 - (B) learning is delayed when errors are not recognized and eliminated
 - (C) even human infants seek patterns involving repetition
 - (D) the basic act of perceiving involves determining which details are important
 - (E) children must be shown how to construct general models from the abundant data surrounding them
20. The author suggests in lines 61-63 ("Galileo . . . concerned") that
- (A) Galileo was as much an engineer as a scientist
 - (B) more careful attention to detail leads to a deeper understanding of science
 - (C) empirical facts do not always clarify scientific understanding
 - (D) motion will never be fully understood by non-physicists
 - (E) the most profound scientific discoveries are sometimes the most obvious
21. The "particular circumstances" mentioned in lines 67-68 refer to
- (A) the status of science
 - (B) an object's environment
 - (C) an individual scientist's predicament
 - (D) an illogical tradition
 - (E) a unique problem

22. In line 75, "medium" most nearly means a

- (A) mathematical average
- (B) middle region
- (C) natural habitat
- (D) surrounding substance
- (E) beneficial environment

23. Lines 83-86 reveal which of the following about Galileo?

- (A) He respected Aristotle as one of the first philosophers to engage in scientific observation.
- (B) He considered Aristotle and others like him mistaken in their approach to motion.
- (C) He believed that rival scientists would try to take credit for his discoveries.
- (D) He feared that his studies of motion could have religious ramifications.
- (E) He conducted significant experiments that served to support his theories.

24. The author uses the expression "get in the way" (lines 87-88) to

- (A) emphasize the difficulty created by too much information
- (B) question the value of elaborate experimental procedures
- (C) illustrate a pragmatic approach to a theoretical dilemma
- (D) argue that Galileo was many years ahead of his time
- (E) suggest the limits of Galileo's physics of motion

STOP

If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.

SECTION 5
Time — 25 minutes
20 Questions

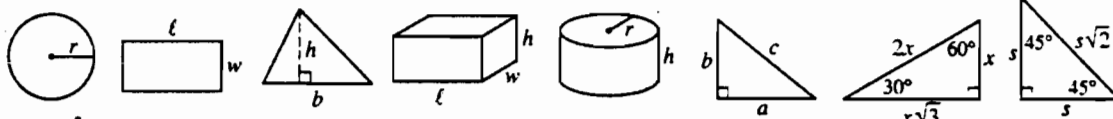
Turn to Section 5 (page 5) of your answer sheet to answer the questions in this section.

Directions: For this section, solve each problem and decide which is the best of the choices given. Fill in the corresponding circle on the answer sheet. You may use any available space for scratchwork.

Notes

- The use of a calculator is permitted.
- All numbers used are real numbers.
- Figures that accompany problems in this test are intended to provide information useful in solving the problems. They are drawn as accurately as possible EXCEPT when it is stated in a specific problem that the figure is not drawn to scale. All figures lie in a plane unless otherwise indicated.
- Unless otherwise specified, the domain of any function f is assumed to be the set of all real numbers x for which $f(x)$ is a real number.

Reference Information



$$A = \pi r^2$$

$$C = 2\pi r$$

$$A = \ell w$$

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

$$V = \ell wh$$

$$V = \pi r^2 h$$

$$c^2 = a^2 + b^2$$

Special Right Triangles

The number of degrees of arc in a circle is 360.

The sum of the measures in degrees of the angles of a triangle is 180.

1. If $\frac{x}{x-2} = \frac{39}{37}$, then $x =$

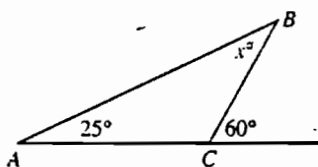
- (A) 37
(B) 39
(C) 41
(D) 74
(E) 78

STUDENTS IN AN ADVANCED BIOLOGY CLASS

	Juniors	Seniors	Total
Boys	k	n	m
Girls	r	s	t
Total	w	x	z

2. In the table above, each letter represents the number of students in that category. Which of the following must be equal to z ?

- (A) $k + s$
(B) $m + x$
(C) $r + s$
(D) $r + s + t$
(E) $k + n + r + s$



3. In $\triangle ABC$ above, what is the value of x ?

(A) 25
(B) 30
(C) 35
(D) 40
(E) 60

4. The Martins' refrigerator is broken and it will cost \$300 to fix it. A new energy-efficient refrigerator, costing \$900, will save the Martins \$15 per month on their electric bill. If they buy the new refrigerator, in x months the Martins will have saved an amount equal to the difference between the cost of the new refrigerator and the cost of fixing the old one. What is the value of x ?

(A) 20
(B) 25
(C) 36
(D) 40
(E) 60

5. The perimeter of equilateral triangle ABC is 3 times the perimeter of equilateral triangle DEF . If the perimeter of $\triangle DEF$ is 10, what is the length of one side of $\triangle ABC$?

(A) $3\frac{1}{3}$
(B) 10
(C) 15
(D) 30
(E) 40

6. A machine mints coins at the rate of one coin per second. If it does this for 10 hours each day, approximately how many days will it take the machine to mint 360,000 coins?

(A) 10
(B) 100
(C) 1,000
(D) 10,000
(E) 100,000

7. If the average (arithmetic mean) of x and $3x$ is 12, what is the value of x ?

(A) 2
(B) 4
(C) 6
(D) 12
(E) 24

8. At Maple Creek High School, some members of the chess club are on the swim team and no members of the swim team are tenth graders. Which of the following must also be true?

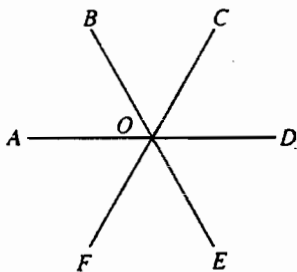
(A) No members of the chess club are tenth graders.
(B) Some members of the chess club are tenth graders.
(C) Some members of the chess club are not tenth graders.
(D) More tenth graders are on the swim team than are in the chess club.
(E) More tenth graders are in the chess club than are on the swim team.

9. If $3x - n = x + 1$, what is n in terms of x ?

(A) $4x + 1$
(B) $2x + 1$
(C) $2 - x$
(D) $1 - 2x$
(E) $1 - 4x$

10. If k is a positive integer, let \boxed{k} be defined as the set of all multiples of k . All of the numbers in which of the following sets are also in all three of the sets $\boxed{2}$, $\boxed{3}$, and $\boxed{5}$?

(A) $\boxed{5}$
(B) $\boxed{6}$
(C) $\boxed{10}$
(D) $\boxed{21}$
(E) $\boxed{60}$



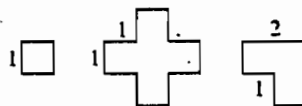
Note: Figure not drawn to scale.

11. In the figure above, \overline{AD} , \overline{BE} , and \overline{CF} intersect at point O . If the measure of $\angle AOB$ is 80° and \overline{CF} bisects $\angle BOD$, what is the measure of $\angle EOF$?

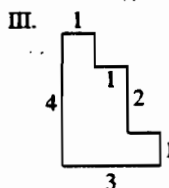
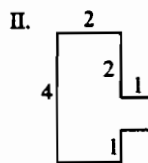
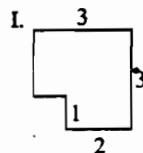
- (A) 40°
- (B) 50°
- (C) 60°
- (D) 70°
- (E) 80°

12. If k is a positive integer, what is the least value of k for which $\sqrt{\frac{5k}{3}}$ is an integer?

- (A) 3
- (B) 5
- (C) 15
- (D) 25
- (E) 60



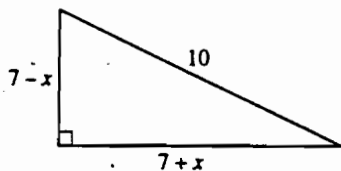
13. The figures above represent three pieces of cardboard. All angles of the cardboard pieces are right angles, all short sides have length 1, and all long sides have length 2. Which of the following figures could be made from only the three pieces of cardboard without overlapping or cutting them?



- (A) None
- (B) I only
- (C) II only
- (D) III only
- (E) I and II

14. How many integers greater than 20 and less than 30 are each the product of exactly two different numbers, both of which are prime?

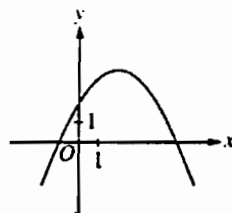
(A) Zero
(B) One
(C) Two
(D) Three
(E) Four



Note: Figure not drawn to scale.

15. The figure above is a right triangle. What is the value of $49 + x^2$?

(A) 50
(B) 51
(C) 72
(D) 98
(E) 100

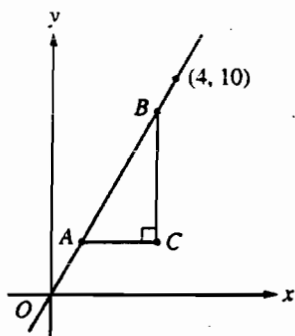


16. The figure above shows the graph of a quadratic function h whose maximum value is $h(2)$. If $h(a) = 0$, which of the following could be the value of a ?

(A) -1
(B) 0
(C) 2
(D) 3
(E) 4

17. If k and h are constants and $x^2 + kx + 7$ is equivalent to $(x + 1)(x + h)$, what is the value of k ?

(A) 0
(B) 1
(C) 7
(D) 8
(E) It cannot be determined from the information given.



Note: Figure not drawn to scale.

18. In the figure above, if the legs of triangle ABC are parallel to the axes, which of the following could be the lengths of the sides of triangle ABC ?

(A) 2, 5, and $\sqrt{29}$
 (B) 2, 5, and 7
 (C) 3, 3, and $3\sqrt{2}$
 (D) 3, 4, and 5
 (E) 4, 5, and $\sqrt{41}$

19. Let the function f be defined by $f(x) = 2x - 1$.

If $\frac{1}{2}f(\sqrt{t}) = 4$, what is the value of t ?

(A) $\frac{3}{\sqrt{2}}$
 (B) $\frac{7}{2}$
 (C) $\frac{9}{2}$
 (D) $\frac{49}{4}$
 (E) $\frac{81}{4}$

20. If k is a positive integer, which of the following must represent an even integer that is twice the value of an odd integer?

(A) $2k$
 (B) $2k + 3$
 (C) $2k + 4$
 (D) $4k + 1$
 (E) $4k + 2$

STOP

If you finish before time is called, you may check your work on this section only.
 Do not turn to any other section of the test.

SECTION 6
Time — 25 minutes
24 Questions

Turn to Section 6 (page 6) of your answer sheet to answer the questions in this section.

Directions: For each question in this section, select the best answer from among the choices given and fill in the corresponding circle on the answer sheet.

Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five words or sets of words labeled A through E. Choose the word or set of words that, when inserted in the sentence, best fits the meaning of the sentence as a whole.

Example:

Hoping to ----- the dispute, negotiators proposed a compromise that they felt would be ----- to both labor and management.

- (A) enforce . . . useful
- (B) end . . . divisive
- (C) overcome . . . unattractive
- (D) extend . . . satisfactory
- (E) resolve . . . acceptable

(A) (B) (C) (D) (E)

1. Much interpersonal communication is implicit in -----, expressive movements.
(A) exposés (B) verbalizations (C) gestures
(D) cognitions (E) intuitions
2. By virtue of her extensive experience and her ----- of practical knowledge, 87-year-old Louisa Vigil was ----- by her family in New Mexico as its chief advice-giver and matriarch.
(A) store . . . condemned
(B) supply . . . dismissed
(C) wealth . . . regarded
(D) modicum . . . abandoned
(E) deficit . . . praised

3. Castillo's poetry has generated only enthusiastic response: praise from the general public and ----- from the major critics.

(A) condemnation (B) sarcasm (C) plaudits
(D) irony (E) pathos

4. The twigs of this shrub have a signature ----- whose pungency enables people to ----- the shrub even in winter when its leaves have fallen.

(A) scent . . . cultivate
(B) flavor . . . conceal
(C) appearance . . . recognize
(D) texture . . . locate
(E) aroma . . . identify

5. The announcement that the city would raze the landmark school building was such a distressing ----- that it provoked an outcry.

(A) disclosure (B) evaluation (C) liberation
(D) instance (E) inquiry

The passages below are followed by questions based on their content; questions following a pair of related passages may also be based on the relationship between the paired passages. Answer the questions on the basis of what is stated or implied in the passages and in any introductory material that may be provided.

Questions 6-9 are based on the following passages.

Passage 1

Line The first three years of life appear to be a crucial start-
5 ing point—a period particularly sensitive to the protective mechanisms of parental and family support. For millennia, parents have recognized the newborn's basic need for safety, nourishment, warmth, and nurturing. Now science
10 has added stunning revelations about human development from birth to age three, confirming that parents and other adult caregivers play a critical role in influencing a child's development. No other period of human life is as suited to learning as are a child's first three years. Babies raised by
15 caring, attentive adults in safe, predictable environments are better learners than those raised with less attention in less secure settings.

Passage 2

15 Much early childhood literature suggests that the first three years of life are the critical years for brain development. Yet new findings in neuroscience suggest that the brain retains its ability to reorganize itself in response to experience or injury throughout life: after the loss of sensory input from an amputated limb, for example,
20 adults are able to learn new motor skills effectively. It may be useful to question the simplistic view that the brain becomes unbendable and increasingly difficult to modify beyond the first few years of life. If so, we should also be wary of claims that parents have only
25 a single, biologically delimited, once-in-a-lifetime opportunity to help their children build better brains.

6. Which best expresses the relationship between Passage 2 and Passage 1?

- (A) Passage 2 urges particular changes as a result of the findings described in Passage 1.
- (B) Passage 2 mocks those who support the argument presented in Passage 1.
- (C) Passage 2 offers a personal anecdote that casts doubt upon the beliefs espoused in Passage 1.
- (D) Passage 2 questions an assumption underlying the ideas expressed in Passage 1.
- (E) Passage 2 provides a scientific explanation for the examples cited in Passage 1.

7. Both authors would most likely agree with which of the following statements?

- (A) The brain becomes increasingly inflexible as a person grows older.
- (B) Adults can bounce back from injuries as readily as children can.
- (C) Children raised by attentive parents are generally good learners.
- (D) It is widely acknowledged that the first three years are important to a child's development.
- (E) Most scientists have recently changed their views about human development prior to age three.

8. Passage 2 as a whole suggests that its author would most likely react to lines 9-10 in Passage 1 ("No other . . . years") with

- (A) indignation
- (B) skepticism
- (C) humor
- (D) ambivalence
- (E) approval

9. Lines 3-9 of Passage 1 ("For millennia . . . development") draw a parallel between

- (A) traditional practices and contemporary critiques
- (B) basic human needs and intellectual endeavors
- (C) widespread beliefs and scientific findings
- (D) parental anxieties and developmental advances
- (E) experimental hypotheses and proven theories

Questions 10-15 are based on the following passage.

The following passage is from a 1988 book on women in the pre-Civil War South. The author discusses Harriet Jacobs and Frederick Douglass, escaped slaves who wrote accounts of their enslavement and escape to freedom.

In self-consciously writing for a White, northern, middle-class audience, Harriet Jacobs did not differentiate herself from the most celebrated male authors of slave narratives. Frederick Douglass, for example, firmly identified himself with the triumph of manliness and individualism that slavery suppressed. In so doing, he explicitly called upon his northern readers to recognize that the sufferings and inequities to which he had been subjected by the very condition of enslavement directly contravened their deepest principles of individualism. Harriet Jacobs faced a more difficult task. For her, a woman, to claim that enslavement violated the principles of individualism would be to risk having her story dismissed. A few northern White women were beginning to work out the analogy between slavery and the oppression of women, but their view had not won general sympathy. Inequalities between women and men still appeared to many northerners, even those who opposed slavery, as manifestations of natural differences. Northern women who sought improvement in their own condition clung to the discourses of true womanhood and domesticity to make their case. Northern gender conventions differed from southern ones, but they, too, dictated that a woman should address the public modestly and deferentially, if at all. A poignant account of the violation of a woman's virtue stood a much better chance of appealing to northern sensibilities than a pronouncement for woman's individual rights, if only because such an account reaffirmed woman's essentially domestic nature. Perhaps Jacobs would have written differently had she been able to write for an audience of slave women, but few slave women could read, and she could not, in any case, have reached them. Her only hope for a hearing lay in reaching the same people who avidly read Harriet Beecher Stowe.¹ Jacobs left no doubt about her intended readers: "O, you happy free women, contrast your New Year's day with that of the poor bond-woman!"

Jacobs shaped her presentation of herself to conform, at least in part, to the expectations of her intended readers. Like Douglass, who invoked the rhetoric of male individualism to encourage identification with his narrative, she had to make her readers take the oppression of slave women personally, to see it as a threat to their own sense of themselves as women. To touch their hearts, she had to address them in their own idiom, tell her story in a way with which they could identify. For her readers to accept her as a woman, she had to present herself as a woman like them. She exposed slavery as a violation of the norms of woman-

hood and portrayed slave women as essentially like their northern White sisters in their goals and sensibilities.

Slavery, in this portrayal, constituted a crime against woman's essential nature—her yearning for virtue, domesticity, and motherhood. Jacobs followed Douglass in accepting the norms of society as absolutes—the articulations of innate human nature—which were directly contradicted by slavery.

¹ Author of *Uncle Tom's Cabin*, a passionate anti-slavery novel

10. The primary purpose of the passage is to

- (A) probe the emotional world of a famous author
- (B) present a comprehensive history of a particular period
- (C) denounce the injustice of slavery
- (D) explore the narrative choices of a writer
- (E) argue in favor of a particular style of writing

11. Frederick Douglass' rhetorical strategy as described in lines 4-10 might best be summarized as

- (A) identification with a concept followed by partial rejection
- (B) recognition of a group's wrongdoing followed by explicit steps to correct it
- (C) elaboration on an unfamiliar argument followed by unusual qualifications
- (D) evocation of a revered concept followed by a specific reference to its undermining
- (E) analysis of a particular event followed by a subjective plea

12. In line 14, "work out" most nearly means

- (A) exercise
- (B) conciliate
- (C) struggle for
- (D) formulate
- (E) solve

13. In the context of lines 18-21 ("Northern women . . . their case"), which of the following might be an argument used by women attempting to improve their condition?

- (A) Women are as intelligent and capable as men.
- (B) Women who are granted more personal liberties become better mothers.
- (C) Allowing women more individual freedom will help them be more productive in society.
- (D) Oppressing women is as immoral as owning slaves.
- (E) Refusing to allow women certain freedoms violates the principle of self-determination.

14. The passage suggests that Jacobs' decisions on how best to shape her narrative revealed her willingness to be

- (A) pragmatic
- (B) disingenuous
- (C) scholarly
- (D) presumptuous
- (E) melodramatic

15. The tone of the passage can be described as both

- (A) disappointed and critical
- (B) analytical and appreciative
- (C) regretful and angry
- (D) ironic and jocular
- (E) hopeful and moralistic

Questions 16-24 are based on the following passage.

The following passage is excerpted from a British novel published in the mid-nineteenth century.

Line
5 It was interesting to be in the quiet old town once more, and it was not disagreeable to be here and there suddenly recognized and stared after. One or two of the tradespeople even darted out of their shops, and went a little way down
10 the street before me, that they might turn, as if they had forgotten something, and pass me face to face—on which occasions I don't know whether they or I made the worse pretence; they of not doing it, or I of not seeing it. Still, my position was a distinguished one, and I was not at all
15 dissatisfied with it, until Fate threw me in the way of that unlimited miscreant, Trabb's boy.

Casting my eyes along the street at a certain point of my progress, I beheld Trabb's boy approaching, lashing himself with an empty blue bag. Deeming that a serene
15 and unconscious contemplation of him would best beseech me, and would be most likely to quell his evil mind, I advanced with that expression of countenance, and was rather congratulating myself on my success, when suddenly the knees of Trabb's boy smote together,
20 his hair uprose, his cap fell off, he trembled violently in every limb, staggered out into the road, and crying to the populace, "Hold me! I'm so frightened!" feigned to be in a paroxysm of terror and contrition, occasioned by the dignity of my appearance. As I passed him, his
25 teeth loudly chattered in his head, and with every mark of extreme humiliation, he prostrated himself in the dust.

This was a hard thing to bear, but this was nothing. I had not advanced another two hundred yards, when, to my inexpressible terror, amazement, and indignation, I again
30 beheld Trabb's boy approaching. He was coming round a narrow corner. His blue bag was slung over his shoulder, honest industry beamed in his eyes, a determination to proceed to Trabb's with cheerful briskness was indicated in his gait. With a shock he became aware of me, and was
35 severely visited as before; but this time his motion was rotatory, and he staggered round and round me with knees more afflicted, and with uplifted hands as if beseeching my mercy. His sufferings were hailed with the greatest joy by a knot of spectators, and I felt utterly
40 confounded.

I had not got as much further down the street as the post office, when I again beheld Trabb's boy shooting round by a back way. This time, he was entirely changed. He wore the blue bag in the manner of my great-coat,
45 and was strutting along the pavement towards me on the opposite side of the street, attended by a company of delighted young friends to whom he from time to time exclaimed, with a wave of his hand, "Don't know yah!" Words cannot state the amount of aggravation and injury
50 wreaked upon me by Trabb's boy, when, passing abreast of me, he pulled up his shirt collar, twined his side-hair,

stuck an arm akimbo, and smirked extravagantly by, wriggling his elbows and body, and drawing to his attendants, "Don't know yah, don't know yah, 'pon my soul don't know yah!" The disgrace attendant on his immediately afterwards taking to crowing and pursuing me across the bridge with crows, as from an exceedingly dejected fowl who had known me when I was a blacksmith, culminated the disgrace with which I left the town, and
60 was, so to speak, ejected by it into the open country.

16. The general organization of the passage is best described by which of the following?

- (A) A remembrance of three encounters that lead to ignominious flight
- (B) An account of a loosely related series of events
- (C) A narration that demonstrates the circular logic behind Trabb's boy's actions
- (D) A description of an action from several points of view
- (E) A progression from a state of isolation to a state of community and fellowship

17. The first paragraph of the passage implies that the narrator felt

- (A) apathetic and helpless at being a stranger in town
- (B) distanced and smug toward the townspeople
- (C) bored and unimportant in a provincial town
- (D) confused and disoriented on a busy street
- (E) nostalgic and proud on returning to his hometown

18. In context, the word "progress" (line 13) implies that the narrator

- (A) has noble ideas concerning the future
- (B) intends to effect some change in the town
- (C) thinks of his stroll as a kind of procession
- (D) was not expecting trouble from Trabb's boy
- (E) is recollecting a past rise in fortune

19. The phrase "that expression of countenance" (line 17) refers to the narrator's

- (A) guilty conscience
- (B) friendly greeting
- (C) feigned indifference
- (D) premonition of disaster
- (E) recognition of Trabb's boy

20. In context, the word "visited" (line 35) most nearly means
- (A) called on
 - (B) shared an experience with
 - (C) resided temporarily with
 - (D) haunted
 - (E) afflicted
21. The sufferings of Trabb's boy "were hailed with the greatest joy" (lines 38-39) because the townspeople
- (A) were glad to see a silly boy endure some punishment
 - (B) were amused by the derision the gestures implied
 - (C) misunderstood the meaning of the boy's behavior
 - (D) had always enjoyed the narrator's sense of humor
 - (E) delighted in the antics between two friends
22. The primary motivation behind Trabb's boy's exclamation "Don't know yah" (lines 48 and 54-55) is to
- (A) remind the narrator that strangers are not welcome in the town
 - (B) mock the narrator's demeanor of aloofness
 - (C) exaggerate the townspeople's desire to deny acquaintance with the narrator
 - (D) entice the narrator to introduce himself
 - (E) arouse the sympathy of the townspeople
23. The narrator's presentation is most like that of a
- (A) novelist commenting on an influential predecessor
 - (B) mechanic explaining the reason a machine has broken down
 - (C) social commentator delivering an exhortation
 - (D) scientist explaining a controversial hypothesis
 - (E) writer recounting an unpleasant personal experience
24. The most pervasive comic strategy of the passage is the
- (A) commentary provided by the onlooking townspeople
 - (B) contrast between the narrator's sense of dignity and the antics of the boy
 - (C) lack of comprehension shown in retrospect by the narrator
 - (D) invocation of fate to rationalize human faults
 - (E) presentation of Trabb's boy as the object of the townspeople's ridicule

STOP

If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.

SECTION 8
Time — 20 minutes
16 Questions

Turn to Section 8 (page 7) of your answer sheet to answer the questions in this section.

Directions: For this section, solve each problem and decide which is the best of the choices given. Fill in the corresponding circle on the answer sheet. You may use any available space for scratchwork.

Notes

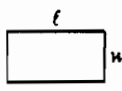
- The use of a calculator is permitted.
- All numbers used are real numbers.
- Figures that accompany problems in this test are intended to provide information useful in solving the problems. They are drawn as accurately as possible EXCEPT when it is stated in a specific problem that the figure is not drawn to scale. All figures lie in a plane unless otherwise indicated.
- Unless otherwise specified, the domain of any function f is assumed to be the set of all real numbers x for which $f(x)$ is a real number.

Reference Information

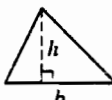


$$A = \pi r^2$$

$$C = 2\pi r$$



$$A = lw$$



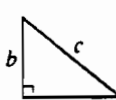
$$A = \frac{1}{2}bh$$



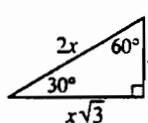
$$V = lwh$$



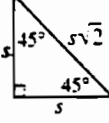
$$V = \pi r^2 h$$



$$c^2 = a^2 + b^2$$



Special Right Triangles



The number of degrees of arc in a circle is 360.

The sum of the measures in degrees of the angles of a triangle is 180.

1. A restaurant menu lists 8 dinners and 3 desserts. How many different dinner-dessert combinations are possible from this menu?

- (A) 24
(B) 12
(C) 11
(D) 8
(E) 3

The sum of $3x$ and 5 is equal to the product of x and $\frac{1}{3}$.

2. Which of the following equations gives the relationship stated in the problem above?

- (A) $3x = \frac{1}{3}x + 5$
(B) $5(3x) = x + \frac{1}{3}$
(C) $3(x + 5) = \frac{1}{3}x$
(D) $3x + 5 = x + \frac{1}{3}$
(E) $3x + 5 = \frac{1}{3}x$

3. A clerk accidentally threw a valuable document into one of 90 trash cans. It is equally likely that the document is in any of these 90 trash cans. If exactly 15 of these 90 trash cans are blue, what is the probability that the document will be in a blue trash can?

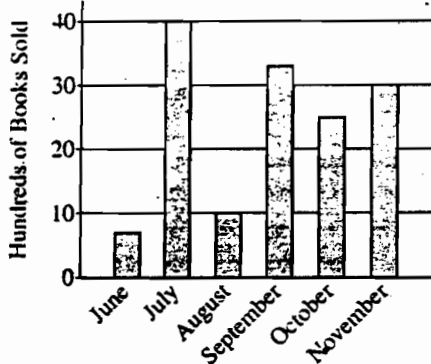
- (A) $\frac{1}{4}$
 (B) $\frac{1}{5}$
 (C) $\frac{1}{6}$
 (D) $\frac{1}{15}$
 (E) $\frac{1}{90}$

4. How many different integer pairs (x, y) satisfy the

equation $\frac{x}{y} = \frac{1}{2}$?

- (A) One
 (B) Two
 (C) Three
 (D) Four
 (E) More than four

ELLEN'S BOOKSTORE SALES



5. According to the graph above, during which of the following two-month periods did Ellen's Bookstore sell the least number of books?
- (A) June and July
 (B) July and August
 (C) August and September
 (D) September and October
 (E) October and November

6. In the figure above, $AC = 24$ and $AB = BC$. Point D (not shown) is on the line between A and B such that $AD = DB$. What does DC equal?

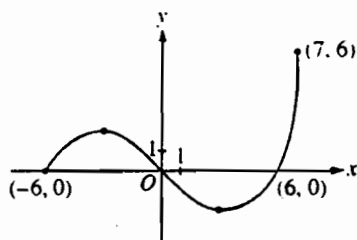
- (A) 6
 (B) 12
 (C) 16
 (D) 18
 (E) 20

7. If n is a positive integer, then $(6 \times 10^{-n}) \div (1 \times 10^{-n})$ must equal

- (A) $\frac{7}{10}$
(B) $\frac{7}{10^n}$
(C) $\frac{7}{10^{2n}}$
(D) $\frac{6}{10^n}$
(E) $\frac{6}{10^{2n}}$

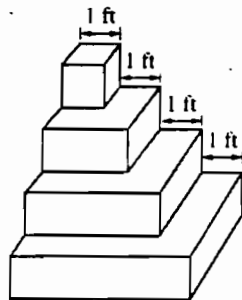
8. How many more degrees of arc are there in $\frac{1}{4}$ of a circle than in $\frac{1}{5}$ of a circle?

- (A) 9°
(B) 18°
(C) 24°
(D) 30°
(E) 36°



9. Based on the graph of the function f above, what are the values of x for which $f(x)$ is negative?

- (A) $-6 < x < 0$
(B) $0 < x < 6$
(C) $6 < x < 7$
(D) $-6 < x < 6$
(E) $-6 < x < 0$ and $6 < x < 7$



10. The figure above shows the dimensions of a pedestal constructed of 4 layers of marble. Each layer is a rectangular solid that is 1 foot high and has a square base. How many cubic feet of marble make up the pedestal?

- (A) 14
(B) 16
(C) 30
(D) 36
(E) 80

11. If x and y are positive integers and $4(2^x) = 2^y$, what is x in terms of y ?

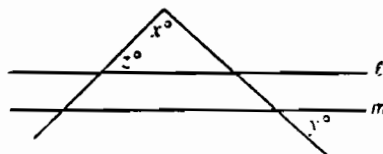
(A) $y - 2$
(B) $y - 1$
(C) y
(D) $y + 1$
(E) $y + 2$

12. If the degree measures of the angles of a triangle are in the ratio 2:3:4, by how many degrees does the measure of the largest angle exceed the measure of the smallest angle?

(A) 20°
(B) 30°
(C) 40°
(D) 50°
(E) 60°

13. The rate for a telephone call between City A and City B is 50 cents for the first minute and 30 cents for each additional minute or portion thereof. Which of the following functions describes the cost, in dollars, of a phone call between these two cities that lasts for n minutes, if n is a positive integer?

(A) $f(n) = 0.80n$
(B) $f(n) = 0.50 + 0.30n$
(C) $f(n) = 0.50 + 0.30(n + 1)$
(D) $f(n) = 0.50 + 0.30(n - 1)$
(E) $f(n) = 0.50n + 0.30(n - 1)$



14. In the figure above, if $l \parallel m$, what does z equal in terms of x and y ?

(A) $x + y$
(B) $x - y$
(C) $180 - x$
(D) $180 - x + y$
(E) $180 - x - y$

15. If $\frac{n}{n-1} \cdot \frac{1}{n} \cdot \frac{n}{n+1} = \frac{5}{k}$ for positive integers n and k , what is the value of k ?

(A) 1
(B) 5
(C) 24
(D) 25
(E) 26

16. To celebrate a colleague's graduation, the m coworkers in an office agreed to contribute equally to a catered lunch that costs a total of y dollars. If p of the coworkers fail to contribute, which of the following represents the additional amount, in dollars, that each of the remaining coworkers must contribute to pay for the lunch?

(A) $\frac{y}{m}$
(B) $\frac{y}{m-p}$
(C) $\frac{py}{m-p}$
(D) $\frac{y(m-p)}{m}$
(E) $\frac{py}{m(m-p)}$

STOP

If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.

SECTION 9
Time — 20 minutes
19 Questions

Turn to Section 9 (page 7) of your answer sheet to answer the questions in this section.

Directions: For each question in this section, select the best answer from among the choices given and fill in the corresponding circle on the answer sheet.

Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five words or sets of words labeled A through E. Choose the word or set of words that, when inserted in the sentence, best fits the meaning of the sentence as a whole.

Example:

Hoping to ----- the dispute, negotiators proposed a compromise that they felt would be ----- to both labor and management.

- (A) enforce . . useful
- (B) end . . divisive
- (C) overcome . . unattractive
- (D) extend . . satisfactory
- (E) resolve . . acceptable

(A) (B) (C) (D) ●

1. Louise Erdrich and Michael Dorris co-wrote *The Crown of Columbus*, a ----- effort successfully mingling their individual styles as writers.
(A) stratified (B) fitful (C) collaborative
(D) vicarious (E) corresponding
2. The eager members of the audience found the lecture topic -----, but unfortunately the lecturer's droning voice had a ----- effect.
(A) interesting . . rousing
(B) advantageous . . beneficial
(C) rudimentary . . reassuring
(D) insipid . . bland
(E) stimulating . . soporific
3. Displays in the Australian Museum's exhibition on dinosaurs are designed to be touched, offering visitors ----- experience.
(A) an odoriferous (B) an archaic (C) an aural
(D) a rustic (E) a tactile
4. The magician's ----- astonished us; her deft performance proved the old saying that the hand is quicker than the eye.
(A) discernment (B) tenacity (C) hilarity
(D) adroitness (E) insecurity
5. Although Keller achieved national ----- as a hero, his lamentable ----- in the political arena soon became painfully apparent.
(A) recognition . . versatility
(B) ignominy . . inadequacy
(C) prestige . . finesse
(D) prominence . . ineptitude
(E) notoriety . . rectitude
6. The professor argued that every grassroots movement needs -----: without this public declaration of motives, there can be no cohesive organization.
(A) an invocation (B) a prospectus
(C) a manifesto (D) an arbitration
(E) a mandate

The two passages below are followed by questions based on their content and on the relationship between the two passages. Answer the questions on the basis of what is stated or implied in the passages and in any introductory material that may be provided.

Questions 7-19 are based on the following passages.

The following passages discuss Colonial Williamsburg, a historically reconstructed village whose residents dress in colonial attire. Visitors to Williamsburg gain a sense of what life may have been like in Virginia's capital in the 1700's. Passage 1 is from a 1960 book by a historian. Passage 2 is from a 1997 book by an architecture critic.

Passage 1

Reconstructed with the aid of the money and enthusiasm of John D. Rockefeller, Jr., Colonial Williamsburg is not only a brilliant example of an American style in historical monuments; it has become a school for training professionals who will be devotees of popular interpretations of United States history. Meanwhile, academic historians, disturbed by the unorthodoxy and the popular appeal of Williamsburg, have not given it the significance it deserves. Some treat it as simply another example—like William Randolph Hearst's notorious imported castles—of a wealthy man indulging his whim. Some dismiss it as an educational “gadget.” Or they treat it condescendingly as a harmless but amusing example of American vulgarity—a kind of patriotic Disneyland. But several visits there have persuaded me that it is significant in ways that its promoters did not advertise.

Williamsburg is a strikingly democratic national monument. It presumes an unspecialized and unaristocratic education. Unless one already knows a great deal, one cannot learn much from visiting the Roman Forum or the Athenian Acropolis. The National Gallery in London seems a jungle of canvas and marble to anyone not already instructed in the different arts and periods represented. These places are planned primarily for the connoisseur or the scholar, not for the citizen.

But because Colonial Williamsburg offers not a segment of the history of a fine art, but a model of an ongoing community, it is intelligible and interesting to nearly everybody. It is a symbol of a culture in which fine arts have become much less important than in other cultures; in which literacy is a higher ideal than literariness. The forbidding ribbon across the antique chair, the “Do Not Touch” sign—these omnipresent features of the European museum have nothing to do with the American restored community. One of the most startling facts to anyone who has toured Europe is that the Williamsburg guides have no set speeches, and are giving visitors their own interpretation of the rigorous course of lectures on colonial life which they are required to attend as part of their training.

A Colonial Williamsburg would be impossible in a country that was not wealthy. It is made for a nation of

paved roads and family vacations. Williamsburg—like the American spelling bee and educational television shows—symbolizes the American refusal to believe that education need be a chore. Business and pleasure *ought* to be combined. In this sense, Williamsburg is perfectly suited.

Passage 2

The replacement of reality with selective fantasy is characteristic of that most successful and staggeringly profitable American phenomenon, the reinvention of the environment as themed entertainment. The definition of “place” as a chosen image probably started in a serious way in the late 1920's at Colonial Williamsburg, predating and paving the way for the new world order of Walt Disney Enterprises. Certainly it was in the restoration of Colonial Williamsburg that the studious fudging of facts received its scholarly imprimatur, and that history and place as themed artifact hit the big time. Williamsburg is seen by the connoisseur as a kind of period piece now, its shortsightedness a product of the limitations of the early preservation movement. Within those limitations, a careful construct was created: a place where one could learn a little romanticized history, confuse the real and unreal, and have—then and now—a very nice time. Knowledge, techniques, and standards have become increasingly sophisticated since then. But it is the Williamsburg image and example as originally conceived that continue to be universally admired and emulated.

Restoration is a difficult and unclear procedure at best; unreality is built into the process, which requires a highly subjective kind of cosmetic surgery. At Williamsburg, there was instant amputation with the conceit of a “cutoff date” for the restoration—in this case, 1770—an arbitrary determination of when a place should be frozen in time. After the cutoff date had been chosen, the next step was to “restore it back.” That means re-creating a place as someone thinks it was—or would like it to have been—at a chosen moment. This usually means moving or destroying a good deal of subsequent architectural history—exactly the stuff of which real history and art are made. In an act of stunning illogic and innocent hubris, a consortium of preservation architects and historical soothsayers plays God.

In the United States, this type of crime against art and history has become an established element of popular culture. It has also given a license to destroy. Approximately 730 buildings were removed at Williamsburg; 81 were renovated and 413 were rebuilt on the original sites. Everything later than the chosen time frame had to disappear. So much for reality. And so much for the messy, instructive, invaluable, and irretrievable revelations that are part of the serendipitous record of urban settlements.

7. The authors of both passages would most likely agree that Colonial Williamsburg has
- (A) achieved popular acceptance in the United States
 - (B) served as a prototype for European theme parks
 - (C) benefited from the input of preservation architects
 - (D) distorted Americans' sense of a collective past
 - (E) overcome the limitations of historical reconstruction
8. In Passage 1, the Roman Forum, the Athenian Acropolis, and the National Gallery (lines 20-21) are presented as examples of places that
- (A) are more interesting to Europeans than to Americans
 - (B) require expert knowledge to be fully appreciated
 - (C) educate visitors about different arts and periods
 - (D) establish aesthetic standards that have been compromised
 - (E) are interesting to everyone who visits them
9. The author of Passage 1 implies that the "ribbon" and the "sign" (lines 31-32) have the effect of
- (A) helping people understand the cultural significance of objects that are displayed in museums
 - (B) preventing damage to antiques that have become both fragile and priceless
 - (C) restricting architects from re-creating places of historic significance
 - (D) keeping people away from things that represent a link to their culture and history
 - (E) conveying the misconception that most people once lived amidst such luxury
10. The author of Passage 1 asserts that anyone who has toured Europe would find which of the following most "startling" (line 35) about Colonial Williamsburg?
- (A) The participation by tourists in historic reenactments
 - (B) The obvious wealth of most of the visitors
 - (C) The freedom accorded to the tour guides
 - (D) The concept of a make-believe historic village
 - (E) The expense of training the tourist guides
11. The approach to education described in lines 42-45 of Passage 1 ("Williamsburg chore") is most similar to which of the following?
- (A) A computer game that teaches geography
 - (B) A museum that displays historic artifacts
 - (C) A film that provides comic relief
 - (D) A textbook that examines controversial issues
 - (E) A scientific experiment that tests a theory
12. In line 55 of Passage 2, the word "studious" serves to emphasize the
- (A) hard work that is required to repair historic structures
 - (B) serious aspects of a place that is designed to provide amusement
 - (C) ingenuity of those who conceived of Colonial Williamsburg's novel approach
 - (D) deliberateness with which Colonial Williamsburg was fabricated
 - (E) academic credentials of the scholars who approve of Colonial Williamsburg
13. In line 81, "plays" most nearly means
- (A) bets on
 - (B) competes against
 - (C) acts as
 - (D) toys with
 - (E) takes advantage of
14. The author of Passage 2 suggests that "this type of crime" (line 82) is
- (A) usual because most people treasure architectural history
 - (B) alarming because it could threaten the livelihood of artists
 - (C) exploitive because it takes advantage of the good will of others
 - (D) negligent because historic landmarks must be regularly maintained
 - (E) ominous because few people seem to be bothered by it
15. The "brilliant example of an American style" (line 3 of Passage 1) would most likely be discredited by the author of Passage 2 on the grounds that
- (A) other countries demonstrated a commitment to architectural preservation long before the United States did so
 - (B) monuments in the United States are striking in appearance but lack true cultural value
 - (C) nostalgic depictions of history make people yearn for a lifestyle that is no longer possible
 - (D) attempts to produce a vivid re-creation of the past result in a sanitized version of history
 - (E) historical restoration is undertaken only when it promises to be profitable

16. The academic historians whose views are mentioned in lines 12-14 of Passage 1 ("Or . . . Disneyland") would be criticized by the author of Passage 2 because they
- (A) overstate the amount of history that people can learn in Williamsburg
 - (B) assume that themed environments like Williamsburg are commonplace
 - (C) accept that history needs to be simplified for popular consumption
 - (D) endorse the creation of replicas over the preservation of original buildings
 - (E) fail to take seriously the damage done by a cultural trend
17. The author of Passage 2 would most likely view the speeches described in lines 34-39 of Passage 1 as evidence of Colonial Williamsburg's
- (A) great value for historical preservationists
 - (B) inability to generate interest in history
 - (C) excellent reputation among scholars
 - (D) lack of architectural integrity
 - (E) tendency to take liberties with historical facts
18. Which contrast best describes how the author of each passage views historical reconstructions in the United States?
- (A) As escapist in Passage 1; as educational in Passage 2
 - (B) As lucrative in Passage 1; as unprofitable in Passage 2
 - (C) As admirable in Passage 1; as lamentable in Passage 2
 - (D) As stagnant in Passage 1; as dynamic in Passage 2
 - (E) As diverse in Passage 1; as homogeneous in Passage 2
19. The discussion of Colonial Williamsburg in both passages focuses on the challenge of
- (A) upgrading the conditions of deteriorating historic buildings
 - (B) showcasing the diverse architectural styles of a single time period
 - (C) representing history in an accessible but authentic context
 - (D) dramatizing the uniqueness of colonial institutions
 - (E) making historical reconstruction more affordable

STOP

If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.

SECTION 10

Time — 10 minutes

14 Questions

Turn to Section 10 (page 7) of your answer sheet to answer the questions in this section.

Directions: For each question in this section, select the best answer from among the choices given and fill in the corresponding circle on the answer sheet.

The following sentences test correctness and effectiveness of expression. Part of each sentence or the entire sentence is underlined; beneath each sentence are five ways of phrasing the underlined material. Choice A repeats the original phrasing; the other four choices are different. If you think the original phrasing produces a better sentence than any of the alternatives, select choice A; if not, select one of the other choices.

In making your selection, follow the requirements of standard written English; that is, pay attention to grammar, choice of words, sentence construction, and punctuation. Your selection should result in the most effective sentence—clear and precise, without awkwardness or ambiguity.

EXAMPLE:

Laura Ingalls Wilder published her first book and she was sixty-five years old then.

- (A) and she was sixty-five years old then
- (B) when she was sixty-five
- (C) at age sixty-five years old
- (D) upon the reaching of sixty-five years
- (E) at the time when she was sixty-five

A ● C D E

1. To fear the act of impeachment and to think of it that it threatens the presidential office is to be misinformed about the Constitution and ignorant of the law.

- (A) that it threatens the presidential office
- (B) as a threat to the presidency
- (C) that a threat exists for the presidency
- (D) as it were a threat at the presidency
- (E) as if it were like a threat to the presidency

2. The disposal of nuclear fission's unwanted by-products is one of the thorniest problems in developing nuclear power.

- (A) The disposal of nuclear fission's unwanted by-products is
- (B) Unwanted by-products of nuclear fission that need to be disposed of are
- (C) How nuclear fission's unwanted by-products get to be disposed of is
- (D) Ridding nuclear fission of unwanted by-products are
- (E) For nuclear fission to get rid of unwanted by-products is

3. No biographer can attest to absolute accuracy in documenting the activities of his or her subject, this biographer of Cesar Chavez is no exception.

- (A) subject, this biographer of Cesar Chavez is no exception
- (B) subject, and this biographer of Cesar Chavez is no exception
- (C) subject; this biography of Cesar Chavez is no exception
- (D) subject; such a biography of this one of Cesar Chavez is no exception
- (E) subject, with this Cesar Chavez biographer being no exception

4. Unlike Charles Lamb, Horace Walpole actually set out to be the historian of his age.

- (A) Unlike Charles Lamb, Horace Walpole actually set out to be the historian of his age.
- (B) Unlike Charles Lamb, Horace Walpole was different in that he actually set out to be the historian of his age.
- (C) Unlike Charles Lamb, Horace Walpole actually set out to be the historian of his age and Lamb did not.
- (D) Charles Lamb did not, but Horace Walpole's intention was to be the historian of his age.
- (E) Different from Charles Lamb, for being the historian of his age was the intention of Horace Walpole.

5. Paradoxically, one way that Shakespeare transcended his era was because of having included it in his plays.
- (A) because of having included it
(B) when he included it
(C) through his including of it
(D) by its inclusion of it
(E) by including it
6. Laughing because they had missed their stop while reading the map, the task for the tourists now was getting off the bus and back to their destination.
- (A) task for the tourists now was
(B) tourists' task now was
(C) tourists now facing the task of
(D) tourists nevertheless now faced the task of
(E) tourists now faced the task of
7. For weeks, one of the company's starring ballerinas were performing so infrequently that dance lovers feared something was wrong.
- (A) were performing so infrequently that dance lovers feared something was
(B) was performing so infrequently; dance lovers feared something to be
(C) were performing so infrequently that dance lovers feared something has
(D) was performing so infrequently that dance lovers feared something was
(E) was performing very infrequently; so dance lovers fearing something
8. When Catherine the Great had a magnificent dinner service of Sèvres porcelain made for her, she was scandalized by its great cost, which became the subject of prolonged controversy.
- (A) which became
(B) so it was to be
(C) with a result that it was destined to become
(D) therefore becoming
(E) consequently it would become
9. Though the damage caused by strip-mining was often irreparable to the natural environment, it was once used to supply half the coal produced annually in the United States.
- (A) Though the damage caused by strip-mining was often irreparable to the natural environment, it
(B) Though irreparable damage is caused often to the natural environment by strip-mining, it
(C) Though strip-mining often caused irreparable damage to the natural environment, it
(D) Despite the fact of often irreparable damage to the natural environment, strip-mining
(E) In spite of often irreparable damage to the natural environment, strip-mining
10. The filibuster on voting-rights legislation went on for three days and nights; senators slept when they could on benches in the hall.
- (A) nights; senators slept when they could
(B) nights, which meant senators sleeping when possible
(C) nights; therefore, it meant that senators would sleep when possible
(D) nights and therefore the senators would be sleeping when able to
(E) nights; with senators sleeping when they could
11. Insofar as so many people were going to the music festival, the highway was jammed with cars.
- (A) Insofar as so many people were going
(B) With the great many people who are going
(C) In that there being so many people who went
(D) Because there was a great many people who went
(E) Because so many people were going
12. The villagers found the visitors equally as fascinating as their customs were mystifying.
- (A) equally as fascinating as their customs were
(B) equally fascinating and their customs
(C) as fascinating and their customs
(D) as fascinating as their customs were
(E) as fascinating and their customs were

13. Although he played a leading role in planning spacecraft expeditions, Dr. Carl Sagan refused to accept praise for the plans he designed nor otherwise profiting from later advancements in space exploration.

- (A) designed nor otherwise profiting
- (B) had designed nor otherwise did he profit
- (C) has designed nor otherwise to have profited
- (D) designed or otherwise profited
- (E) had designed or otherwise to profit

14. The convenience and widespread availability of watercolor paint account for its popularity with amateur artists.

- (A) account for its popularity
- (B) account for their popularity
- (C) accounts for its popularity
- (D) is why it is popular
- (E) are a reason for its popularity

STOP

If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.

Table 1. Critical Reading Conversion Table			
Raw Score	Scaled Score	Raw Score	Scaled Score
67	800	30	470-530
66	770-800	29	470-530
65	740-800	28	460-520
64	720-800	27	450-510
63	700-800	26	450-510
62	690-790	25	440-500
61	670-770	24	440-500
60	660-760	23	430-490
59	660-740	22	420-480
58	650-730	21	420-480
57	640-720	20	410-470
56	630-710	19	400-460
55	630-710	18	400-460
54	620-700	17	390-450
53	610-690	16	380-440
52	600-680	15	380-440
51	610-670	14	370-430
50	600-660	13	360-420
49	590-650	12	350-410
48	580-640	11	350-410
47	580-640	10	340-400
46	570-630	9	330-390
45	560-620	8	310-390
44	560-620	7	300-380
43	550-610	6	290-370
42	550-610	5	270-370
41	540-600	4	260-360
40	530-590	3	250-350
39	530-590	2	230-330
38	520-580	1	220-320
37	510-570	0	200-290
36	510-570	-1	200-290
35	500-560	-2	200-270
34	500-560	-3	200-250
33	490-550	-4	200-230
32	480-540	-5	200-210
31	480-540	-6 and below	200

Table 2. Math Conversion Table

Raw Score	Scaled Score	Raw Score	Scaled Score
54	800	23	460-520
53	750-800	22	450-510
52	720-800	21	440-500
51	700-780	20	430-490
50	690-770	19	430-490
49	680-740	18	420-480
48	670-730	17	410-470
47	660-720	16	400-460
46	640-700	15	400-460
45	630-690	14	390-450
44	620-680	13	380-440
43	620-680	12	360-440
42	610-670	11	350-430
41	600-660	10	340-420
40	580-660	9	330-430
39	570-650	8	320-420
38	560-640	7	310-410
37	550-630	6	290-390
36	550-630	5	280-380
35	540-620	4	270-370
34	530-610	3	260-360
33	520-600	2	240-340
32	520-600	1	230-330
31	520-580	0	210-310
30	510-570	-1	200-290
29	500-560	-2	200-270
28	490-550	-3	200-250
27	490-550	-4	200-230
26	480-540	-5	200-210
25	470-530	-6 and below	200
24	460-520		

Table 3. Writing Conversion Table

MC Raw Score	Essay Score						
	0	1	2	3	4	5	6
49	650-690	670-720	690-740	710-770	750-800	780-800	800
48	630-690	640-720	660-740	690-770	720-800	760-800	780-800
47	600-690	620-720	640-740	660-770	700-800	730-800	760-800
46	580-690	600-720	620-740	650-770	680-800	710-800	740-800
45	570-690	580-720	600-740	630-770	670-800	700-800	730-800
44	560-680	570-710	590-730	620-760	660-790	690-800	720-800
43	540-660	560-690	580-710	610-740	640-780	670-800	700-800
42	530-660	550-690	570-700	600-730	630-770	660-800	690-800
41	530-650	540-680	560-700	590-720	620-760	660-790	680-800
40	520-640	530-670	550-690	580-710	620-750	650-780	680-800
39	510-630	520-660	540-680	570-710	610-740	640-770	670-800
38	500-620	520-650	540-670	560-700	600-730	630-770	660-790
37	490-610	510-640	530-660	560-690	590-720	620-760	650-780
36	480-600	500-630	520-650	550-680	580-720	610-750	640-770
35	480-590	490-620	510-640	540-670	570-710	610-740	640-770
34	470-590	480-620	500-630	530-660	570-700	600-730	630-760
33	460-580	470-610	490-630	520-650	560-690	590-720	620-750
32	450-570	470-600	490-620	510-640	550-680	580-710	610-740
31	440-560	460-590	480-610	510-640	540-670	570-700	600-730
30	430-550	450-580	470-600	500-630	530-660	560-700	590-720
29	430-540	440-570	460-590	490-620	520-650	560-690	590-710
28	420-530	430-560	450-580	480-610	520-650	550-680	580-700
27	410-520	420-550	440-570	470-600	510-640	540-670	570-700
26	400-520	420-550	430-560	460-590	500-630	530-660	560-690
25	390-510	410-540	430-560	450-580	490-620	520-650	550-680
24	380-500	400-530	420-550	450-570	480-610	510-640	540-670
23	370-490	390-520	410-540	440-570	470-600	500-630	530-660
22	370-480	380-510	400-530	430-560	460-590	500-630	520-650
21	370-480	380-510	400-530	430-560	460-590	500-630	520-650
20	360-470	370-500	390-520	420-550	460-580	490-620	520-640
19	350-460	360-490	380-510	410-540	450-580	480-610	510-630
18	340-450	350-480	370-500	400-530	440-570	470-600	500-630
17	330-450	350-480	360-490	390-520	430-560	460-590	490-620
16	320-440	340-470	360-490	390-510	420-550	450-580	480-610
15	310-430	330-460	350-480	380-510	410-540	440-570	470-600
14	300-420	320-450	340-470	370-500	400-530	430-560	460-590
13	300-410	310-440	330-460	360-490	390-520	430-560	450-580
12	290-400	300-430	320-450	350-480	390-510	420-550	450-570
11	280-390	290-420	310-440	340-470	380-510	410-540	440-570
10	270-390	280-420	300-430	330-460	370-500	400-530	430-560
9	260-380	280-410	290-430	320-450	360-490	390-520	420-550
8	250-370	270-400	290-420	320-450	350-480	380-510	410-540
7	240-360	260-390	280-410	310-440	340-470	370-510	400-530
6	230-350	250-380	270-400	300-430	330-460	360-500	390-520
5	230-340	240-370	260-390	290-420	320-460	360-490	380-520
4	220-340	230-370	250-380	280-410	320-450	350-480	380-510
3	210-330	220-360	240-380	270-400	310-440	340-470	370-500
2	200-320	210-350	230-370	260-400	300-430	330-460	360-490
1	200-300	200-330	220-350	250-380	280-410	310-450	340-470
0	200-290	200-320	210-340	240-370	270-410	300-440	330-470
-1	200-280	200-310	200-330	220-350	250-390	290-420	310-450
-2	200-260	200-290	200-310	200-340	240-370	270-410	300-430
-3	200-240	200-270	200-290	200-320	240-360	270-390	300-420
-4	200-230	200-260	200-280	200-300	240-340	270-370	300-400
-5	200	200-230	200-250	200-280	240-320	270-350	300-370
-6	200	200-220	200-240	200-270	240-310	270-340	300-370
-7	200	200-220	200-230	200-260	240-300	270-330	300-360
-8	200	200-210	200-230	200-250	240-290	270-320	300-350
-9	200	200-210	200-230	200-250	240-290	270-320	300-350
-10	200	200-210	200-230	200-250	240-290	270-320	300-350
-11	200	200-210	200-230	200-250	240-290	270-320	300-350
-12	200	200-210	200-230	200-250	240-290	270-320	300-350

**Table 4. Writing Multiple-Choice
Conversion Table**

Raw Score	Scaled Score	Raw Score	Scaled Score
49	78-80	21	46-56
48	77-80	20	45-55
47	74-80	19	44-54
46	72-80	18	43-53
45	70-80	17	42-52
44	69-79	16	41-51
43	67-77	15	40-50
42	66-76	14	39-49
41	65-75	13	38-48
40	64-74	12	37-47
39	63-73	11	36-46
38	62-72	10	35-45
37	61-71	9	34-44
36	60-70	8	33-43
35	59-69	7	32-42
34	58-68	6	31-41
33	57-67	5	30-40
32	56-66	4	29-39
31	55-65	3	28-38
30	54-64	2	27-37
29	53-63	1	25-35
28	52-62	0	24-34
27	51-61	-1	22-32
26	50-60	-2	20-30
25	49-59	-3	20-28
24	48-58	-4	20-26
23	47-57	-5	20-23
22	46-56	-6 and below	20-22

SAT Practice Test #8 Answer Key

CRITICAL READING								
Section 4			Section 6			Section 9		
Multiple-Choice Questions			Multiple-Choice Questions			Multiple-Choice Questions		
COR. ANS.	DIFF. LEV.		COR. ANS.	DIFF. LEV.		COR. ANS.	DIFF. LEV.	
1.	A	E	1.	C	E	1.	C	E
2.	C	M	2.	C	M	2.	E	M
3.	A	M	3.	C	M	3.	E	M
4.	D	M	4.	E	M	4.	D	M
5.	C	M	5.	A	M	5.	D	M
6.	E	M	6.	D	M	6.	C	H
7.	A	H	7.	D	E	7.	A	M
8.	D	H	8.	B	M	8.	B	E
9.	C	E	9.	C	M	9.	D	M
10.	D	M	10.	D	M	10.	C	M
11.	A	H	11.	D	M	11.	A	M
12.	E	E	12.	D	M	12.	D	M
13.	B	E	13.	B	H	13.	C	E
14.	E	M	14.	A	M	14.	E	M
15.	D	E	15.	B	M	15.	D	M
16.	C	M	16.	A	H	16.	E	H
17.	A	M	17.	B	H	17.	E	M
18.	B	M	18.	C	E	18.	C	M
19.	D	M	19.	C	H	19.	C	M
20.	C	M	20.	E	M			
21.	B	M	21.	B	M			
22.	D	M	22.	B	H			
23.	B	M	23.	E	E			
24.	A	M	24.	B	M			
no. correct			no. correct			no. correct		
no. incorrect			no. incorrect			no. incorrect		

MATH								
Section 2			Section 5			Section 8		
Multiple-Choice Questions			Multiple-Choice Questions			Multiple-Choice Questions		
COR. ANS.	DIFF. LEV.		COR. ANS.	DIFF. LEV.		COR. ANS.	DIFF. LEV.	
1.	E	E	1.	B	E	1.	A	E
2.	E	E	2.	E	E	2.	E	E
3.	B	E	3.	C	E	3.	C	E
4.	B	E	4.	D	E	4.	E	E
5.	D	M	5.	B	E	5.	C	E
6.	D	M	6.	A	M	6.	D	E
7.	C	M	7.	C	M	7.	B	M
8.	A	H	8.	C	M	8.	B	M
			9.	D	M	9.	B	M
			10.	E	M	10.	C	M
			11.	B	M	11.	A	M
			12.	C	M	12.	C	M
			13.	C	M	13.	D	M
			14.	D	H	14.	E	M
			15.	A	M	15.	C	H
			16.	A	M	16.	E	H
			17.	D	H			
			18.	A	H			
			19.	E	M			
			20.	E	H			
no. correct			no. correct			no. correct		
no. incorrect			no. incorrect			no. incorrect		

Section 2		
Student-Produced Response Questions		
	COR. ANS.	DIFF. LEV.
9.	13.2, 6.5	E
10.	10	E
11.	45	M
12.	105	M
13.	12.5, 25/2	M
14.	3/50, .06	M
15.	192	H
16.	8/7, 1.14	H
17.	$0/1 < x < 3/8, 0 < x < .375$	H
18.	1350	H
no. correct (9-18)		

NOTE: Difficulty levels are E (easy), M (medium), and H (hard).

WRITING						
Section 1	Section 3			Section 10		
Essay	Multiple-Choice Questions			Multiple-Choice Questions		
	COR. ANS.	DIFF. LEV.		COR. ANS.	DIFF. LEV.	
	1. C	E		1. B	E	
	2. D	E		2. A	E	
	3. A	E		3. B	E	
	4. D	E		4. A	E	
Essay Score* (0-6)	5. E	E		5. E	E	
	6. D	E		6. E	M	
	7. B	E		7. D	E	
	8. C	E		8. A	E	
	9. C	E		9. C	E	
	10. B	E		10. A	E	
	11. D	H		11. E	M	
	12. B	E		12. D	M	
	13. B	E		13. E	M	
	14. E	E		14. A	H	
	15. D	E				
	16. A	E				
	17. D	E				
	18. D	E				
	19. C	M				
	20. A	E				
	21. A	M				
	22. A	M				
	23. E	M				
	24. D	M				
	25. A	E				
	26. C	M				
	27. E	H				
	28. A	M				
	29. E	M				
	30. C	M				
	31. D	E				
	32. D	M				
	33. B	M				
	34. E	M				
	35. D	M				
	no. correct			no. correct		
	no. incorrect			no. incorrect		

* To score your essay, use the SAT scoring guide in Chapter 9 and the free sample essays available online at www.collegeboard.com/satonlinecourse. On this practice test, your essay score should range from 0 to 6. (Keep in mind that on the actual SAT, your essay will be read by two readers and you will receive a score of 0 to 12 on your score report.)

NOTE: Difficulty levels are E (easy), M (medium), and H (hard).