

# CHAPTER 14

## **FIVE PRACTICE PSATs WITH DETAILED ANSWER KEYS**

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# **PRACTICE PSAT I**



## ANSWER SHEET

Last Name: \_\_\_\_\_ First Name: \_\_\_\_\_

Date: \_\_\_\_\_ Testing Location: \_\_\_\_\_

### Administering the Test

- **Remove this answer sheet** from the book and use it to record your answers to this test.
- This test will require **2 hours and 10 minutes** to complete. Take this test in one sitting.
- Use a stopwatch to time yourself on each section. The time limit for each section is written clearly at the beginning of each section. The first four sections are 25 minutes long, and the last section is 30 minutes long.
- Each response must **completely fill the oval**. **Erase all stray marks completely**, or they may be interpreted as responses.
- **You must stop ALL work on a section when time is called.**
- If you finish a section before the time has elapsed, check your work on that section. **You may NOT move on to the next section until time is called.**
- Do not waste time on questions that seem too difficult for you.
- Use the test book for scratchwork, but you will only receive credit for answers that are marked on the answer sheets.

### Scoring the Test

- Your scaled score, which will be determined from a conversion table, is based on your raw score for each section.
- You will receive one point toward your raw score for every correct answer.
- You will receive no points toward your raw score for an omitted question.
- For each wrong answer on a multiple-choice question, your raw score will be reduced by 1/4 point. For each wrong answer on a numerical “grid-in” question (Section 4, questions 29–38), your raw score will receive no deduction.

<b>SECTION</b>  <div style="font-size: 48pt; font-weight: bold;">1</div> Critical Reading 25 minutes	1. (A) (B) (C) (D) (E) 2. (A) (B) (C) (D) (E) 3. (A) (B) (C) (D) (E) 4. (A) (B) (C) (D) (E) 5. (A) (B) (C) (D) (E) 6. (A) (B) (C) (D) (E) 7. (A) (B) (C) (D) (E) 8. (A) (B) (C) (D) (E)	9. (A) (B) (C) (D) (E) 10. (A) (B) (C) (D) (E) 11. (A) (B) (C) (D) (E) 12. (A) (B) (C) (D) (E) 13. (A) (B) (C) (D) (E) 14. (A) (B) (C) (D) (E) 15. (A) (B) (C) (D) (E) 16. (A) (B) (C) (D) (E)	17. (A) (B) (C) (D) (E) 18. (A) (B) (C) (D) (E) 19. (A) (B) (C) (D) (E) 20. (A) (B) (C) (D) (E) 21. (A) (B) (C) (D) (E) 22. (A) (B) (C) (D) (E) 23. (A) (B) (C) (D) (E) 24. (A) (B) (C) (D) (E)	Time: 25 minutes  Start: _____  Stop: _____
<b>SECTION</b>  <div style="font-size: 48pt; font-weight: bold;">2</div> Math 25 minutes	1. (A) (B) (C) (D) (E) 2. (A) (B) (C) (D) (E) 3. (A) (B) (C) (D) (E) 4. (A) (B) (C) (D) (E) 5. (A) (B) (C) (D) (E) 6. (A) (B) (C) (D) (E) 7. (A) (B) (C) (D) (E) 8. (A) (B) (C) (D) (E)	9. (A) (B) (C) (D) (E) 10. (A) (B) (C) (D) (E) 11. (A) (B) (C) (D) (E) 12. (A) (B) (C) (D) (E) 13. (A) (B) (C) (D) (E) 14. (A) (B) (C) (D) (E) 15. (A) (B) (C) (D) (E) 16. (A) (B) (C) (D) (E)	17. (A) (B) (C) (D) (E) 18. (A) (B) (C) (D) (E) 19. (A) (B) (C) (D) (E) 20. (A) (B) (C) (D) (E)	Time: 25 minutes  Start: _____  Stop: _____
<b>SECTION</b>  <div style="font-size: 48pt; font-weight: bold;">3</div> Critical Reading 25 minutes	25. (A) (B) (C) (D) (E) 26. (A) (B) (C) (D) (E) 27. (A) (B) (C) (D) (E) 28. (A) (B) (C) (D) (E) 29. (A) (B) (C) (D) (E) 30. (A) (B) (C) (D) (E) 31. (A) (B) (C) (D) (E) 32. (A) (B) (C) (D) (E)	33. (A) (B) (C) (D) (E) 34. (A) (B) (C) (D) (E) 35. (A) (B) (C) (D) (E) 36. (A) (B) (C) (D) (E) 37. (A) (B) (C) (D) (E) 38. (A) (B) (C) (D) (E) 39. (A) (B) (C) (D) (E) 40. (A) (B) (C) (D) (E)	41. (A) (B) (C) (D) (E) 42. (A) (B) (C) (D) (E) 43. (A) (B) (C) (D) (E) 44. (A) (B) (C) (D) (E) 45. (A) (B) (C) (D) (E) 46. (A) (B) (C) (D) (E) 47. (A) (B) (C) (D) (E) 48. (A) (B) (C) (D) (E)	Time: 25 minutes  Start: _____  Stop: _____

## SECTION

## 4

## Math

25 minutes

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## SECTION

## 5

Writing  
Skills

30 minutes

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Time: 30 minutes

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# Section I

Time—25 minutes

24 Questions (1–24)

Each of the sentences below is missing one or two portions. Read each sentence. Then select the choice that most logically completes the sentence, taking into account the meaning of the sentence as a whole.

Example:

Rather than accepting the theory unquestioningly, Deborah regarded it with -----.

- (A) mirth
- (B) sadness
- (C) responsibility
- (D) ignorance
- (E) skepticism

*Correct response: (E)*

**1** The seemingly offhand remark was in fact part of a ----- effort by the director to make the actors feel that their jobs were at risk.

- (A) celebrated
- (B) calculated
- (C) required
- (D) reflexive
- (E) conventional

**2** In true -----, two different animal species develop a mutually ----- relationship in the same habitat.

- (A) parasitism..helpful
- (B) cooperation..itemized
- (C) mortality..precarious
- (D) antagonism..resourceful
- (E) symbiosis..beneficial

**3** Danitra knew at an early age that dancing was her -----; it was what she was meant to do, and she pursued it with single-minded commitment.

- (A) embodiment
- (B) acquisition
- (C) vocation
- (D) corollary
- (E) acceptance

**4** Although history has shown that the value of our liberty is timeless, our appreciation of such national ----- seems all too often -----.

- (A) benevolence..solid
- (B) virtues..fleeting
- (C) concepts..permanent
- (D) anachronisms..transitory
- (E) diversions..ephemeral

**5** Jill Ker Conway's autobiography explores the ----- of childhood, the unexpected changes that occur in a young life.

- (A) vicissitudes
- (B) veneers
- (C) evanescence
- (D) vulnerabilities
- (E) attachments

**6** Many scientists believe that an ancient supernova may have ----- human evolution by bombarding the Earth with cosmic rays that altered the global climate, thereby ----- our ancestors to climb down from the trees and walk upright.

- (A) hastened..pursuing
- (B) resolved..forcing
- (C) terminated..daring
- (D) spurred..impelling
- (E) propelled..defying

GO ON TO THE NEXT PAGE ►►►

- 7** When the Senator decided to ----- his political party and affiliate himself with the opposition, he was understandably treated as ----- by those former colleagues whom he had left behind.

(A) repudiate . . a curator  
 (B) abandon . . a recluse  
 (C) ascertain . . a champion  
 (D) complement . . an expatriate  
 (E) forsake . . an apostate

- 8** Despite the many attempts at -----, the dictator could not be assuaged, and the bellicose nature of his public announcements made it clear that conflict could not be -----.

(A) diplomacy . . disclosed  
 (B) conciliation . . averted  
 (C) tact . . denigrated  
 (D) belligerence . . forestalled  
 (E) jingoism . . circumvented

The passages below are followed by questions based on their content and the relationship between the passages. Answer each question based on what is stated or implied in the passages.

### Questions 9–12 are based on the following passages.

#### Passage 1

Line I have given in to the practice, adopted long ago by many of my colleagues, known as the “beginning-of-the-year review,” even though it abrades the very fiber of my being. It is, fundamentally, an admission of failure. Imagine the manager of a professional baseball team spending the first few weeks of spring training reviewing the names of the positions or in what direction to run the bases. Yet the students coming to us from the best high schools in America need to be reminded of the most fundamental academic tasks and tools—forming hypotheses, adding fractions, constructing a clear sentence. I can’t say with great certainty what is happening in our high schools, but I can say that glittering grades do not always indicate glittering minds. There seems to be no grounding, no sense of the

20 fundamental reasoning skills and concepts of academia. I often wonder if our high schools shouldn’t be spending more time making sure their ladders are on secure footing before sending so many students scrambling up.

#### Passage 2

25 In every choreographed educational crisis, the “back to basics” line always kicks up its heels the highest. The thinking is seemingly irrefutable: our children won’t succeed without a solid foundation in basic skills. They can’t do calculus before they learn long division. They can’t write a good college essay before they learn the five-paragraph model. They can’t read Shakespeare before learning the phonetic code. The model is the pyramid: we must build a solid foundation if our children are ever to reach the pinnacle of education, where the most profound questions of our era are examined. But we are losing too many students in building the pyramid. It is worth the risk to take them to the top of the pyramid, unfinished as it may be, so that they might see the glorious expanse of knowledge before them, yet to be reached. If we don’t take the time to show them that expanse, they will likely never learn that their hard labor has any real purpose. We are too worried about failure, about not getting the right answers, that our questions and our tasks have lost almost all of their meaning.

- 9** Passage 1 is written from the perspective of

(A) a politician  
 (B) a college professor  
 (C) a high school teacher  
 (D) a high school student  
 (E) a parent

- 10** In Passage 2, the “top of the pyramid” (line 39) represents the point at which students

(A) have mastered all of the basic skills  
 (B) have been accepted into college  
 (C) have acquired a degree  
 (D) can glimpse the most challenging academic problems  
 (E) can outperform other students on standardized tests



**11** The two authors differ in their perspectives on fundamental academic skills in that the author of Passage 1 believes that

- (A) they should not be taught, while the author of Passage 2 believes that they form the foundation of a good education
- (B) they should be taught in high school, while the author of Passage 2 believes that they should be taught in college
- (C) they are underemphasized in high school, while the author of Passage 2 believes that they are overemphasized
- (D) they can be mastered by all students, while the author of Passage 2 believes that they are beyond the ability of some students
- (E) they are inimical to higher education, while the author of Passage 2 believes that they should be the focus of a college education

**12** Which of the following devices is used by BOTH authors?

- (A) statistics
- (B) vignette
- (C) hyperbole
- (D) personification
- (E) metaphor

The questions below are to be answered on the basis of what is stated or implied in the passage below or the introductory material that precedes the passage.

### Questions 13–24 are based on the following passages.

*The following passages examine the work of F. Scott Fitzgerald, the American twentieth-century novelist.*

#### Passage 1

Line Regarding most of the criticism and much of Fitzgerald's work, I am once again struck by the urge to respond to Fitzgerald's writing. Sometimes—often—that response is only an exclamation of delight. Other times it is a need  
5 to try to write out a response in one's own words. This is no time, at the end of a brief introduction, to be starting an essay on Fitzgerald. What follows are some jottings

10 occasioned by this encounter with Fitzgerald and his critics.

First, modern criticism (certainly not of Fitzgerald alone) is often too refined. The big things having been said, young critics tend  
15 to make too much of small things. Color symbolism, the guest list in *The Great Gatsby*, and the “gat” in “Gatsby” are examples of what one hopes will not dominate criticism of Fitzgerald's work in the future.

20 Second, there is joy in Fitzgerald's work that should not be passed over in dwelling upon profundities, complexities, and tragic implications. Edmund Wilson described it early as a “quality exceedingly rare among even the  
25 young American writers of the day; he is almost the only one among them who has any real light-hearted gaiety.” Recognizing that quality and acknowledging its worth may draw attention to the variety to be found in a writer  
30 who is commonly charged with having too narrow a range. It also adds to the dimensions of *The Great Gatsby* and *Tender is the Night*, those novels that do most to maintain Fitzgerald's reputation as a serious writer.  
35 For it is not only theme and technique that distinguish these novels, but the flashes of brilliance, comic as well as tragic, that illuminate individual scenes.

Third, Fitzgerald's style, as has been said  
40 over and over, is his great strength. Here scholarship has done a great service to Fitzgerald. One's awareness of his style is enhanced by examining the manuscripts through which the finished phrases and paragraphs came into existence. One feels  
45 better about one's own strikeouts, and pencillings, and second and third thoughts. One learns.

Fourth, in the presence of so much  
50 Fitzgerald scholarship, it is easy to become both solemn and heavy about Fitzgerald, man and work. Perhaps there should be some licensing procedure that would prevent bad writers, pretentious and heavy scholars, from  
55 dealing with Fitzgerald. Lacking that, a reader can be grateful that, despite some notable exceptions, students as well as professional critics seem attracted to Fitzgerald out of a common respect for his prose style and the storyteller's art. Like Fitzgerald's work, much of  
60 Fitzgerald criticism is distinguished by extraordinary felicity of expression.

Finally, Fitzgerald will probably continue to claim the interest of both the general reader and the scholar-critic. The mysteries of his genius, like the mysteries of his style, remain to be pondered. As our own perspectives change, his various works will be seen in different lights. The final test of Fitzgerald, as of all writers, is that others want to read his works and to share the pleasures they receive.

## Passage 2

After a brief revival, the novels of Scott Fitzgerald seem destined again for obscurity, labeled this time, by their most recent critics, as darkly pessimistic studies of America's spiritual and ideological failures. *The Great Gatsby*, we are now told, is not simply a chronicle of the Jazz age but rather a dramatization of the betrayal of the naïve American dream in a corrupt society.

From the start, Fitzgerald's personal dreams of romance contained the seeds of their own destruction. In his earliest works, his optimistic sense of the value of experience is overshadowed by a personal intuition of tragedy; his capacity for naïve wonder is chastened by satiric and ironic insights which make surrender to the romantic impulse incomplete. Though able to idealize the sensuous excitement of an exclusive party or a lovely face, Fitzgerald could not ignore the speciousness inherent in the romantic stimuli of his social world—in the unhurried gracious poise that money can buy.

At the same time that Fitzgerald perceived the melancholy nature of romantic illusion, his attitude towards the rich crystallized. The thirst for money is a crucial motive in *Gatsby* as in Fitzgerald's other novels, and yet none of his major characters are materialists, for money is never their final goal. The rich are too accustomed to money to covet it. It is simply the badge of their "superiority" and the justification of their consuming snobberies.

Inevitably then, Fitzgerald saw his romantic dream threaded by a double irony. Those who possess the necessary means lack the will, motive, or capacity to pursue a dream. Those with the heightened sensitivity to the promises of life have it because they are the disinherited, forever barred from the white palace where "the king's daughter, the golden girl" awaits "safe and proud above the struggles of the poor."

**13** The first paragraph of Passage 1 reveals that the author of Passage 1

- (A) has recently been introduced to Fitzgerald's novels
- (B) has met F. Scott Fitzgerald personally
- (C) has been critical of many of Fitzgerald's earlier works
- (D) is writing an introduction to a book of literary criticism
- (E) is a novelist

**14** As it is used in line 13, "refined" most nearly means

- (A) processed
- (B) formal
- (C) concerned with minor details
- (D) challenging
- (E) pure

**15** The author of Passage 1 mentions Edmund Wilson in line 23 as an example of one who

- (A) has deeply explored the tragic implications of Fitzgerald's novels
- (B) has written novels that were inspired by Fitzgerald's work
- (C) has criticized certain themes in Fitzgerald's novels
- (D) recognizes a quality in Fitzgerald's works that others may overlook
- (E) focuses excessively on irrelevant aspects of Fitzgerald's style

**16** In line 30, the phrase "charged with" most nearly means

- (A) emboldened by
- (B) weakened by
- (C) given the responsibility of
- (D) electrified by
- (E) accused of

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**17** The sentence “One learns” (line 48) is intended primarily to convey the idea that

- (A) Fitzgerald’s editors often destroyed his best work
- (B) college English classes should study more of Fitzgerald’s lesser-known novels
- (C) scholars should revisit Fitzgerald’s novels many times
- (D) most professors of literature enjoy Fitzgerald’s prose
- (E) literary craft includes a good deal of reworking

**18** The purpose of the fifth paragraph (lines 49–62) of Passage 1 is primarily to express the author’s concern about

- (A) the unrestricted access to Fitzgerald’s personal archives
- (B) the tone and quality of some criticism about Fitzgerald
- (C) insufficient seriousness in criticism about Fitzgerald
- (D) the excessive quantity of criticism about Fitzgerald
- (E) the difference in quality between the work of students and the work of professional scholars

**19** In saying that “Fitzgerald’s personal dreams of romance contained the seeds of their own destruction” (lines 81–83), the author of Passage 2 means that

- (A) Fitzgerald’s works have always lacked popular appeal
- (B) Fitzgerald’s life was cut tragically short
- (C) Fitzgerald’s novels contain elements of tragedy
- (D) Fitzgerald was never satisfied with the quality of his own work
- (E) Fitzgerald’s romantic scenes were unrealistic

**20** The “white palace” (line 111) represents

- (A) the distinctive status of writers
- (B) moral superiority
- (C) literary perfection
- (D) a life of privilege
- (E) power acquired by force

**21** How would the author of Passage 1 likely respond to the statement made in Passage 2 that “the novels of Scott Fitzgerald seem destined again for obscurity” (lines 72–73)?

- (A) He would reluctantly agree because he believes that readers are finding it increasingly difficult to understand Fitzgerald’s themes.
- (B) He would strongly agree, because he believes that Fitzgerald’s works are fatally flawed.
- (C) He would reluctantly disagree because he believes that they will continue to be a popular, but not a critical, success.
- (D) He would strongly disagree because he believes that Fitzgerald’s work will continue to have strong appeal.
- (E) He would suggest that the statement is irrelevant because the popularity of Fitzgerald’s novels is not important.

**22** How does the “joy” (line 20) mentioned in Passage 1 differ from the “wonder” (line 86) mentioned in Passage 2?

- (A) The “joy” is regarded as something that makes Fitzgerald’s work distinctive, while the “wonder” is regarded as being compromised.
- (B) The “joy” is regarded as insincere, while the “wonder” is regarded as too blatant.
- (C) The “joy” is regarded as a flaw in Fitzgerald’s work, while the “wonder” is regarded as a positive feature of his work.
- (D) The “joy” is regarded as something unique in American literature, while the “wonder” is regarded as being common to most novels of the twentieth century.
- (E) The “joy” is regarded as a feature of Fitzgerald’s life, while the “wonder” is regarded as a feature of Fitzgerald’s work, but not his life.

**23**

Which statement would most likely be supported by the authors of both passages?

- (A) Some critics of Fitzgerald's work have focused on the tragic implications of his novels.
- (B) Fitzgerald's works are even more popular today than they were in his time.
- (C) The characters in *The Great Gatsby* are materialists.
- (D) Fitzgerald's works are far more optimistic than many believe.
- (E) Scholarship on Fitzgerald's works should focus more on their style than on their themes.

**24**

How would the author of Passage 1 likely respond to the analysis of Fitzgerald's work presented in lines 81–94?

- (A) He would disagree with its claim that Fitzgerald had a "capacity for naïve wonder."
- (B) He would agree with its focus on irony.
- (C) He would regard it as an unnecessary focus on the tragic aspects of Fitzgerald's works.
- (D) He would regard it as insufficiently critical of Fitzgerald's choice of theme.
- (E) He would suggest that it ignores important details about Fitzgerald's personal life that would explain the themes in his works.

**STOP**

***You may check your work, on this section only, until time is called.***

# Section 2

Time—25 minutes

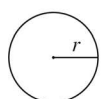
20 Questions

## Directions for Multiple-Choice Questions

In this section, solve each problem, using any available space on the page for scratchwork. Then decide which is the best of the choices given and fill in the corresponding oval on the answer sheet.

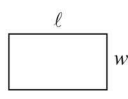
- You may use a calculator on any problem. All numbers used are real numbers.
- Figures are drawn as accurately as possible EXCEPT when it is stated that the figure is not drawn to scale.
- All figures lie in a plane unless otherwise indicated.

## Reference Information

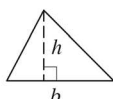


$$A = \pi r^2$$

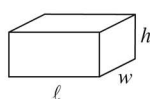
$$C = 2\pi r$$



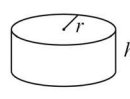
$$A = \ell w$$



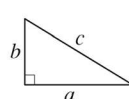
$$A = \frac{1}{2}bh$$



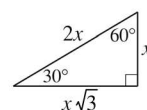
$$V = \ell wh$$



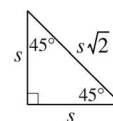
$$V = \pi r^2 h$$



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



Special Right Triangles



The arc of a circle measures  $360^\circ$ .

Every straight angle measures  $180^\circ$ .

The sum of the measures of the angles in a triangle is  $180^\circ$ .

- 1** The area of a rectangle with a height of 4 cm and a base of 6 cm is how many times greater than the area of a triangle with a height of 4 cm and a base of 4 cm?

(A) 1  
(B) 1.5  
(C) 2  
(D) 2.5  
(E) 3

- 2** If  $x = 2y + 2$ , how much greater is  $6x$  than  $12y$ ?

(A) 2  
(B) 6  
(C) 8  
(D) 12  
(E) 24

- 3** How many integers between 10 and 40 are divisible by both 2 and 6?

(A) Two  
(B) Three  
(C) Four  
(D) Five  
(E) Six

- 4** If it is now 4:30 p.m., what time will it be exactly 100 hours from now?

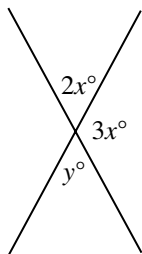
(A) 4:30 p.m.  
(B) 8:30 p.m.  
(C) 12:30 a.m.  
(D) 2:30 a.m.  
(E) 4:30 a.m.

- 5** Carrie, Denise, and Emily sold a total of 48 candy bars. If Emily sold four times as many candy bars as Denise did, and Denise sold three times as many candy bars as Carrie did, how many candy bars did Denise sell?

(A) 3  
(B) 6  
(C) 9  
(D) 12  
(E) 15

2

6



Note: Figure not drawn to scale.

In the figure above, what is the value of  $y$ ?

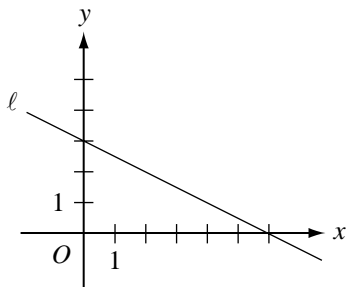
- (A) 72
- (B) 60
- (C) 48
- (D) 36
- (E) 40

7

Let the function  $f(x)$  be defined by the equation  $f(x) = 2x - x^2$ . Which of the following has a positive value?

- (A)  $f(0.5)$
- (B)  $f(0)$
- (C)  $f(-0.5)$
- (D)  $f(-1.5)$
- (E)  $f(-2.5)$

8



What is the equation of line  $\ell$  in the figure above?

- (A)  $y = -2x + 3$
- (B)  $y = -\frac{1}{2}x + 3$
- (C)  $y = -\frac{1}{2}x + 6$
- (D)  $y = \frac{1}{2}x + 3$
- (E)  $y = 2x + 6$

9

In a certain homeroom, the number of girls is 6 less than twice the number of boys. If the class contains  $b$  boys, which of the following would express the total number of students present in the class if 2 girls were absent?

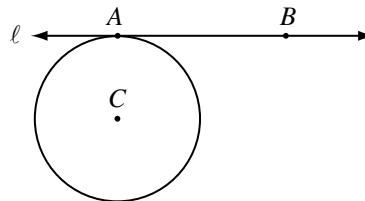
- (A)  $2b - 8$
- (B)  $2b - 4$
- (C)  $3b - 8$
- (D)  $3b - 6$
- (E)  $3b - 4$

10

If  $(x + 5)^2 = 0$ , what is the value of  $(x - 1)(x + 1)$ ?

- (A)  $-26$
- (B)  $-24$
- (C)  $0$
- (D)  $24$
- (E)  $26$

11



Note: Figure not drawn to scale.

In the figure above, the circle with center at  $C$  has a circumference of  $6\pi$ . If line  $\ell$  is tangent to the circle and  $AB = 4$ , what is the distance from  $B$  to  $C$ ?

- (A) 4.8
- (B) 5.0
- (C) 6.2
- (D) 7.0
- (E) 7.2

12

A set consists of five consecutive integers. The sum of these integers is  $-10$ . What is the greatest possible product that can be obtained by multiplying three different integers from this set?

- (A)  $-24$
- (B)  $-6$
- (C)  $0$
- (D)  $6$
- (E)  $24$

- 13** The first day of a 30-day month is a Monday. Which of the following is closest to the probability that a day picked at random from this month will be a Wednesday?

(A) 0.03  
(B) 0.07  
(C) 0.10  
(D) 0.13  
(E) 0.17

- 14** If  $|x| > 2$ , which of the following statements must be true?

I.  $x > 0$   
II.  $x^2 > 2$   
III.  $x^3 > 2$   
(A) II only  
(B) I and II only  
(C) I and III only  
(D) II and III only  
(E) I, II, and III

- 15** A jar contains only red, white, and blue marbles. If the number of red marbles is  $\frac{5}{6}$  the number of white marbles, and the number of red marbles is  $\frac{6}{7}$  the number of blue marbles, what is the least possible number of marbles in the jar?

(A) 18  
(B) 72  
(C) 101  
(D) 113  
(E) 123

**16**

8,  $a$ ,  $b$ , 27

In the sequence above, each term, except the first, is equal to the previous term times a constant. What is the value of  $\frac{b}{a}$ ?

(A) 1.125  
(B) 1.50  
(C) 3.375  
(D) 4.75  
(E) 6.33

- 17** The graph of which of the following points is below the graph of the line  $y = \frac{2}{3}x + 1$ ?

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

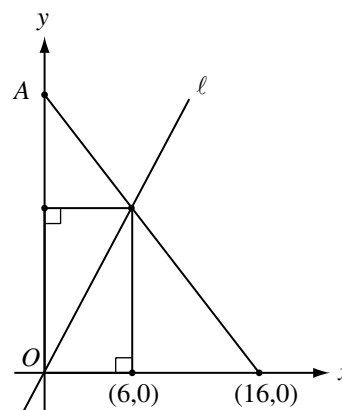
- 18** If  $3^{n-1} = 27^{-1}$ , then  $n =$

(A)  $-3$   
(B)  $-2$   
(C)  $-1$   
(D)  $1$   
(E)  $2$

- 19** If  $x + \frac{1}{x} = y$ , where  $x \neq 0$ , which of the following expresses  $x^2 + \frac{1}{x^2}$  in terms of  $y$ ?

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

**20**



*Note: Figure not drawn to scale.*

If line  $\ell$  in the figure above has a slope of 2, what are the coordinates of point A?

(A)  $(0, 7.2)$   
(B)  $(0, 13.2)$   
(C)  $(0, 14.4)$   
(D)  $(0, 18.4)$   
(E)  $(0, 19.2)$

**STOP**

**You may check your work, on this section only, until time is called.**

## Section 3

Time—25 minutes

24 Questions (25–48)

3

Each of the sentences below is missing one or two portions. Read each sentence. Then select the choice that most logically completes the sentence, taking into account the meaning of the sentence as a whole.

Example:

Rather than accepting the theory unquestioningly, Deborah regarded it with -----.

- (A) mirth
- (B) sadness
- (C) responsibility
- (D) ignorance
- (E) skepticism

*Correct response: (E)*

25

Unlike most farmers, who regarded rain as a great benefit, Harold often regarded it as -----.

- (A) an abundance
- (B) a hardship
- (C) a scheme
- (D) a response
- (E) a distortion

28

The store employees tried to ----- the angry shoppers with offers of discounted merchandise and free gift wrapping.

- (A) exculpate
- (B) impede
- (C) mollify
- (D) pilfer
- (E) abridge

26

Pablo Picasso is considered ----- of artistic perfectionism because he would destroy any of his works that he considered -----.

- (A) an enemy . . poor
- (B) an example . . beautiful
- (C) a paragon . . mediocre
- (D) a proponent . . aesthetic
- (E) an advocate . . monetary

29

Some European governments are concerned that severe immigration restrictions, while rendering nations less ----- to foreign terrorists, would also ----- the influx of creative ideas from abroad.

- (A) pervious . . stem
- (B) impregnable . . halt
- (C) durable . . promote
- (D) penetrable . . hasten
- (E) potent . . restrict

27

Joseph often picked fights with anyone who challenged his ideas, until his friends made it clear that such ----- was unacceptable.

- (A) belligerence
- (B) diligence
- (C) fortitude
- (D) restraint
- (E) eloquence



Each passage below is followed by one or two questions based on its content. Answer each question based on what is stated or implied in the passage that precedes it.

**Questions 30–31 are based on the following passage.**

Line Historical evidence takes many forms,  
including oral traditions and archaeology as  
well as written texts. Study of the very distant  
past necessarily relies primarily on oral  
5 traditions and archaeology; these two kinds of  
evidence offer different perspectives on the past  
and answer different historical questions. Oral  
tradition is the means by which knowledge—  
both fact and myth—was passed on until it was  
10 written down. Archaeology, in contrast, is the  
scientific study of the material remains of past  
human life and activities: fossil relics, artifacts,  
and monuments. Archaeology supplies physical  
evidence of material culture, while oral sources  
15 provide insight into the nonmaterial world of  
ideas, values and beliefs. Archaeological  
investigation may present evidence from  
millions of years before the present or from the  
most recent historical past. Oral traditions,  
20 some of which are ultimately written down, are  
more ephemeral, extending across a single  
lifetime or as far back as the past 10,000 years  
or so of remembered human experience.

- 30** The primary purpose of this passage is to
- (A) promote the study of archaeology
  - (B) describe different oral traditions
  - (C) discuss a few important historical discoveries
  - (D) compare two means of gathering information
  - (E) suggest an improvement to the study of archaeology

- 31** The passage indicates that the “nonmaterial world of ideas, values and beliefs” (lines 15–16) is
- (A) a subject that only archaeologists can study
  - (B) not sufficiently emphasized in historical texts
  - (C) an unreliable source of historical evidence
  - (D) evidence of material culture
  - (E) the substance of oral tradition

**Questions 32–33 are based on the following passage.**

Line After having—with agony and despair—  
lived through the irrational tidal waves of the  
last big war, the world of planners settled down  
to a rose-colored rational optimism: “To give  
5 education, food and health care would suffice  
to bring peace and stability to this world;  
satisfying the ‘basic needs’ for information and  
acceptable material living conditions would  
guarantee mutual understanding and  
10 democratic tolerance within and between  
nations.” This belief has been badly shaken by  
now; we are beginning to see that man is not  
rational enough to make the expected use of the  
improvements achieved in the last 30 years,  
15 that unrest, prejudice, ideological distortion,  
and violence do not come from the poor (who  
might have most reason for such reactions), but  
to a considerable extent from the well-cared-for  
and well-educated classes in many nations—by  
20 no means always the most underdeveloped  
ones—of the world. We discover that reality  
does not conform to our rational prescriptions,  
and we are forced to ponder whether our  
present level of rationality is at all adequate for  
25 dealing with the problems of our world.

- 32** This passage most directly criticizes

- (A) poverty
- (B) war
- (C) dishonesty
- (D) irrationality
- (E) technology

- 33** The parenthetical comment in lines 16–17 indicates that the poor

- (A) are ignored by the more affluent classes
- (B) should be granted more political power
- (C) are more justified than the wealthy in acting rebelliously
- (D) should be the focus of postwar planning
- (E) have talents that are underappreciated in modern societies

First paragraph: *In the Balance: Themes in Global History*, Candice L. Goucher, Charles A. Le Guin, Linda A. Walton, ©1998 McGraw-Hill, p xxxi

Second paragraph: *Culture and Industrialization: An Asian Dilemma*, Rolf E. Vente, Peter S.J. Chen, ©1980 McGraw-Hill, p 52

**GO ON TO THE NEXT PAGE ►►►**

**Questions 34–40 are based on the following passage.**

*The following is an excerpt from a story written by a twentieth-century Yugoslav writer.*

Line I like to get up early and go down to sit on  
my bench by the bank of the river just at the  
crack of dawn, before even the sparrows are  
awake and before the traffic has begun to make  
its daily assault on my nerves. The men with  
hoses have just set out to clean the pavements,  
everything is quiet and happy, just as it must  
have looked a million years ago. The river  
gurgles along, clean and gay, rejoicing at its  
brief moment of rest before the beginning of  
another exhausting day. I'm no hermit or  
misanthrope. Just every now and again I get fed  
up with everything, and I mean *everything*, and I  
feel the need to be alone, completely alone. But  
not for long, for in fact without that  
"everything," I can't get along either. People  
and things simply get me down; maybe because  
both are human products, and there's  
something of that exhausted human core that  
remains in them too. And so I start to want to  
change. The fashionable word for it is  
recreation. We used to have our own word for  
it. Maybe it doesn't convey everything that the  
foreign one does, but in any case none of that is  
so very important as long as a man does have a  
rest and get his strength back regularly. That's  
the thing that we haven't managed to pull out of  
our dusty old dictionaries. Anyway, I go off  
down to the river to get my strength back. And  
that's really what happens; I come to life again.  
I may have come to our appointment with a  
heavy, care-worn head, or I may have been  
thinking all the way about what I might do to  
avoid this or that; still when I arrive, my body  
seems to become light and my mind keen; and  
the river's quiet friendly voice restores the joy  
and hope that had fled before trivial everyday  
anxieties and become hidden away in the  
darkest gloom. I've seldom met anyone who has  
answered my question with anything other  
than that threadbare "very well," and a "very  
well" so bloodless and feeble that you feel  
wretched yourself and don't want to ask again.  
That plague of very well has spread so far, that  
whenever I feel there's so much of it mounting  
up inside me that it's starting to choke me, I go  
off to have a chat with the river. Only then am I  
capable of looking inside myself, bathed,  
refreshed, cleansed (not of sin, I didn't want to  
imply that). And I feel then just how much I've

forgotten myself, lost myself somewhere along  
the way, mislaid an illusion or two, and  
altogether subordinated myself to external  
obsessions and barren desires.

55 I try to prove to myself, starting always right  
at the beginning, that that's life as well, that  
everyday toil and moil, that perpetual bustle  
and panicky attention to the implacable  
dictates of the hands of a clock, that "hello,  
how's it going, be seeing you, in a hurry" tossed  
off in passing . . . somehow I manage to put  
together the *pro et contra*, get back my balance,  
and make use of that skill a man has for always  
finding a way of compromising with himself.  
65 But it's really only putting off the main issue.  
Putting off and putting off, a constant flight  
from open conflict, cowardice.

That much-praised business of working has  
become an end in itself, work for work's sake, a  
sort of undefined elemental need to shake out  
some "surplus life," to exploit one's own self. It's  
lost its original meaning long since its primeval,  
ennobling, creative function; it shouldn't really  
be called *work* any longer, we ought to find  
another word for it.

75 Fortunately, this mood passes. The wood  
right over on the other side that comes down  
to the water's edge doesn't let me sink too  
far down this particular slough. Like green  
lightning, it flashes before me and disperses  
these black thoughts like so much dust.

When the city starts waking up behind me, I  
know that the allotted time of my appointment  
with the river has expired. It ceases to be mine  
and only mine, and becomes an ordinary,  
broad, flat river; tugs harnessed in steel cables  
crawl and struggle upstream towards some  
destination and fishing boats float aimlessly  
about; if there is a wind, a yacht or two can be  
seen. Pensioners come crawling out to their  
favorite bench, children set up a hubbub in a  
nearby school-yard, waiters in the restaurant  
built right over the water begin to discreetly  
clink crockery and cutlery. The day begins.

95 I go off without looking back. The market I  
pass through is brimming with life, peasants  
and housewives on all sides. Slowly I make my  
way home. Invariably I meet some  
acquaintance on the way. From the distance, I  
can see him smiling. If he has the time, he'll  
stop to shake hands, but usually we don't shake  
hands, he just flicks "Hello, how are you?" at me  
as he passes, and smiles, and I smile and say

105 “Very well, thanks and what about you?” and he  
says something in reply, and I suddenly get the  
desire to run after him and catch him up and  
look at him closely, really eyeball to eyeball, to  
see if he’s still smiling as cheerfully as he was  
when he was that far away, and I stand still for a  
110 moment in indecision and look around. He’s  
long way off, too far for it to be worthwhile  
chasing after him, you can never catch up with  
anyone anyway.

115 So I just keep going in the same direction,  
smiling to myself. Today I’ve been down to the  
river.

**34** The first paragraph indicates that, to the narrator, the river is primarily a source of

- (A) food
- (B) reminiscence
- (C) information
- (D) anxiety
- (E) rejuvenation

**35** The sentence in lines 14–16 (“But not for . . . I can’t get along either”) indicates that the narrator

- (A) has been receiving professional therapy
- (B) is not well understood by his peers
- (C) is often frustrated by his inability to get away from people
- (D) needs those aspects of his life that occasionally oppress him
- (E) has been coming to the river for many years

**36** Which of the following is the closest to “the thing that we haven’t managed to pull out of our dusty old dictionaries” (lines 27–28)?

- (A) emotion
- (B) weakness
- (C) restoration
- (D) verbalization
- (E) assault

**37** In line 66, the word “flight” most nearly means

- (A) obligation
- (B) fleeing
- (C) jumping
- (D) floor
- (E) swarm

**38** In the third paragraph (lines 68–75) the narrator suggests that long ago, unlike now, work was

- (A) more challenging
- (B) not necessary for survival
- (C) a social experience
- (D) a creative endeavor
- (E) performed in nature

**39** The “pensioners” (line 90) are mentioned as examples of people who

- (A) do not appreciate the beauty of the river
- (B) speak in a perfunctory manner
- (C) are obsessed with work
- (D) have a balanced perspective on life
- (E) have disrupted the narrator’s solitude

**40** The conflict in this passage is primarily between

- (A) solitude and sociability
- (B) the past and the future
- (C) life and death
- (D) desire and virtue
- (E) wealth and poverty

**Questions 41–48 are based on the following passage.**

*The following is an excerpt from an article about Immanuel Kant, an eighteenth-century British philosopher.*

3

Line According to Kant, his reading of David  
Hume awakened him from his dogmatic  
slumber and set him on the road to becoming  
the “critical philosopher,” whose position can  
5 be seen as a synthesis of the Leibniz-Wolffian  
rationalism and the Humean skepticism. Kant  
termed his basic insight into the nature of  
knowledge “the Copernican revolution in  
philosophy.”

10 Instead of assuming that our ideas, to be  
true, must conform to an external reality  
independent of our knowing, Kant proposed  
that objective reality is known only insofar as it  
conforms to the essential structure of the  
15 knowing mind. He maintained that objects of  
experience—phenomena—may be known, but  
that things lying beyond the realm of possible  
experience—noumena, or things-in-  
themselves—are unknowable, although their  
20 existence is a necessary presupposition.  
Phenomena that can be perceived in the pure  
forms of sensibility, space, and time must, if  
they are to be understood, possess the  
characteristics that constitute our categories of  
25 understanding. Those categories, which  
include causality and substance, are the source  
of the structure of phenomenal experience.

The scientist, therefore, may be sure only  
that the natural events observed are knowable  
30 in terms of the categories. Our field of  
knowledge, thus emancipated from Humean  
skepticism, is nevertheless limited to the world  
of phenomena. All theoretical attempts to know  
things-in-themselves are bound to fail. This  
35 inevitable failure is the theme of the portion of  
the *Critique of Pure Reason* entitled the  
“Transcendental Dialectic.” Here Kant shows  
that the three great problems of metaphysics—  
God, freedom, and immortality—are insoluble  
40 by speculative thought. Their existence can be  
neither affirmed nor denied on theoretical  
grounds, nor can they be scientifically  
demonstrated, but Kant shows the necessity of  
a belief in their existence in his moral  
45 philosophy.

Kant’s ethics centers in his categorical  
imperative (or moral law)—“Act as if the  
maxim from which you act were to become  
through your will a universal law.” This law has

50 its source in the autonomy of a rational being,  
and it is the formula for an absolutely good will.  
However, since we are all members of two  
worlds, the sensible and the intelligible, we do  
not act infallibly in accordance with this law  
55 but, on the contrary, almost always act  
according to inclination. Thus what is  
objectively necessary, i.e., to will in conformity  
to the law, is subjectively contingent; and for  
this reason the moral law confronts us as an  
60 “ought.”

In the *Critique of Practical Reason* Kant  
went on to state that morality requires the  
belief in the existence of God, freedom, and  
immortality, because without their existence  
65 there can be no morality. In the *Critique of  
Judgment* Kant applied his critical method to  
aesthetic and teleological judgments. The chief  
purpose of this work was to find a bridge  
between the sensible and the intelligible worlds,  
70 which are sharply distinguished in his  
theoretical and practical philosophy. This  
bridge is found in the concepts of beauty and  
purposiveness that suggest at least the  
possibility of an ultimate union of the two  
75 realms.

**41** The passage suggests that Kant found David Hume’s philosophy to be

- (A) logically unfounded
- (B) inspirational
- (C) open-minded
- (D) morally repugnant
- (E) charmingly naïve

**42** The author uses the term “dogmatic slumber” (line 2) to suggest that

- (A) Hume wrote very dull prose.
- (B) Kant was a controversial political figure.
- (C) Kant was more intellectually rigid before reading Hume.
- (D) Kant found Hume’s writing to be humorous.
- (E) Hume wrote many more books than Kant did.

- 43** According to the passage, the major theme of the “Transcendental Dialectic” is that
- (A) one cannot know things-in-themselves
  - (B) ethical behavior is unique to humans
  - (C) the existence of God can be proved
  - (D) people should be optimistic
  - (E) philosophers must take a more scientific approach
- 44** According to the passage, Kant’s *Critique of Pure Reason* suggests that free will is
- (A) an illusion
  - (B) gained only through struggle
  - (C) a requirement of ethical behavior
  - (D) knowable as a thing-in-itself
  - (E) an attribute of all living things
- 45** One who behaves strictly according to Kant’s “categorical imperative” (lines 46–47) necessarily believes that any valid moral law should
- (A) apply to all human beings
  - (B) be determined by religious dictate
  - (C) be submitted to scientific testing
  - (D) derive from a democratic process
  - (E) change according to the situation
- 46** The author implies that we “do not infallibly act in accordance with this law” (lines 53–54) because we
- (A) are innately selfish
  - (B) cannot escape the subjectivity of human experience
  - (C) are concerned more with beauty than morality
  - (D) do not understand the history of the law
  - (E) do not have completely free will
- 47** The “bridge” in line 68 is a bridge between
- (A) skeptical philosophy and optimism
  - (B) ethics and aesthetics
  - (C) the past and the future
  - (D) the philosopher and the common person
  - (E) things that can be perceived and things that can be understood
- 48** The primary purpose of the final paragraph is to
- (A) address an objection to Kant’s philosophy
  - (B) illustrate Kant’s impact on later philosophers
  - (C) explain the origin of Kant’s beliefs
  - (D) describe further works of Kant
  - (E) qualify a claim made in the previous paragraph

“Kant, Immanuel,” *Columbia Encyclopedia, Sixth Edition*,  
New York: Columbia University Press, ©2001-2004



**You may check your work, on this section only, until time is called.**

# Section 4

Time—25 minutes

18 Questions (21–38)

## Directions for Multiple-Choice Questions

In this section, solve each problem, using any available space on the page for scratchwork. Then decide which is the best of the choices given and fill in the corresponding oval on the answer sheet.

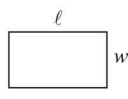
- You may use a calculator on any problem. All numbers used are real numbers.
- Figures are drawn as accurately as possible EXCEPT when it is stated that the figure is not drawn to scale.
- All figures lie in a plane unless otherwise indicated.

## Reference Information

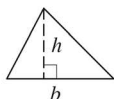


$$A = \pi r^2$$

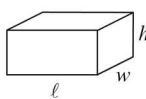
$$C = 2\pi r$$



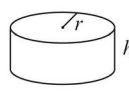
$$A = \ell w$$



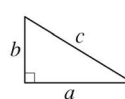
$$A = \frac{1}{2}bh$$



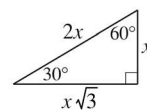
$$V = \ell wh$$



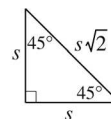
$$V = \pi r^2 h$$



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



Special Right Triangles



The arc of a circle measures  $360^\circ$ .

Every straight angle measures  $180^\circ$ .

The sum of the measures of the angles in a triangle is  $180^\circ$ .

- 21** If a square has a perimeter of 20 centimeters, what is one-half its area, in square centimeters?

(A) 10  
(B) 12.5  
(C) 20  
(D) 25  
(E) 50

- 22** Which of the following numbers is equal to one-third of its square?

(A)  $\frac{1}{9}$   
(B)  $\frac{1}{3}$   
(C) 3  
(D) 6  
(E) 9

- 23** Checkers are stacked into four piles such that each pile has  $k$  more checkers than the previous pile. If the first pile contains 3 checkers, and there are 30 checkers in total in the four piles, what is the value of  $k$ ?

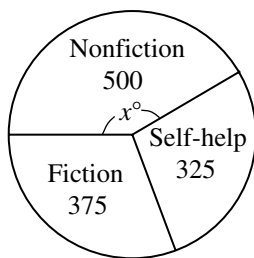
(A) 2  
(B) 3  
(C) 4  
(D) 5  
(E) 6

- 24** What number is equal to  $\frac{3}{5}$  of itself plus 240?

(A) 144  
(B) 280  
(C) 360  
(D) 400  
(E) 600

**25**

Total Sales of Different Book Genres  
(in thousands)



The pie graph above shows the book sales for a publishing company in a single year. If  $x$  represents the measure, in degrees, of the central angle of the sector representing the sales of nonfiction books, what is the value of  $x$ ?

- (A) 120
- (B) 125
- (C) 135
- (D) 145
- (E) 150

**26**

Set  $S$  consists of 10 consecutive even integers that have an average (arithmetic mean) of 23. Which of the following must be true?

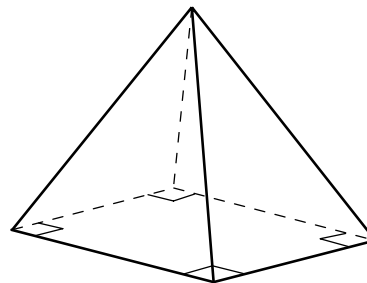
- I. The median of set  $S$  is 23.
- II. No two integers in set  $S$  have a difference greater than 10.
- III. There are no multiples of 5 in set  $S$ .

- (A) I only
- (B) II only
- (C) I and II only
- (D) I and III only
- (E) I, II, and III

**27**

If  $2^n = \frac{2}{2^k}$ , what is the value of  $n + k$ ?

- (A)  $-2$
- (B)  $-1$
- (C)  $0$
- (D)  $1$
- (E)  $2$

**28**

The pyramid in the figure above has a square base and four congruent triangular faces. If the area of the base is 144 square inches and the height of the pyramid is 8 inches, what is the area of one of the triangular faces, in square inches?

- (A) 42
- (B) 48
- (C) 60
- (D) 96
- (E) 120

**4**

### Directions for Student-Produced Response Questions

Each of the questions in this section requires you to solve the problem and enter your answer in a grid, as shown below.

- If your answer is  $\frac{2}{3}$  or  $.666\dots$ , you must enter **the most accurate value the grid can accommodate**, but you may do this in one of four ways:

Start in first column

2	/	3	
.	.	.	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

Grid result here

Start in second column

	2	/	3
.	.	.	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

Grid as a truncated decimal

.	6	6	6
.	.	.	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

Grid as a rounded decimal

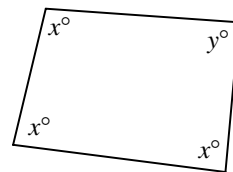
.	6	6	7
.	.	.	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

- In the example above, gridding a response of 0.67 or 0.66 is **incorrect** because it is less accurate than those above.
- The scoring machine cannot read what is written in the top row of boxes. You **MUST** fill in the numerical grid accurately to get credit for answering any question correctly. You should write your answer in the top row of boxes only to aid your gridding.
- Do **not** grid in a mixed fraction like  $3\frac{1}{2}$  as  $\boxed{3} \boxed{1} / \boxed{2}$  because it will be interpreted as  $\frac{31}{2}$ . Instead, convert it to an improper fraction like  $\frac{7}{2}$  or a decimal like 3.5 before gridding.
- None of the answers will be negative, because there is no negative sign in the grid.
- Some of the questions may have more than one correct answer. You must grid only one of the correct answers.
- You may use a calculator on any of these problems.
- All numbers in these problems are real numbers.
- Figures are drawn as accurately as possible EXCEPT when it is stated that the figure is not drawn to scale.
- All figures lie in a plane unless otherwise indicated.

29

What is the result when  $\frac{1}{4}$  of 80 is divided by  $\frac{1}{3}$  of 90?

31



Note: Figure not drawn to scale.

30

For all real numbers  $x$  and  $y$ , let  $x \oslash y$  be defined by the equation  $x \oslash y = (x + y)(x - y)$ . What is the value of  $5 \oslash 3$ ?

In the figure above, if  $x = 89$ , what is the value of  $y$ ?



- 32** If the maximum value in the range of the function  $y = f(x)$  is 6, what is the maximum value in the range of the function  $y = 3f(x - 1)$ ?

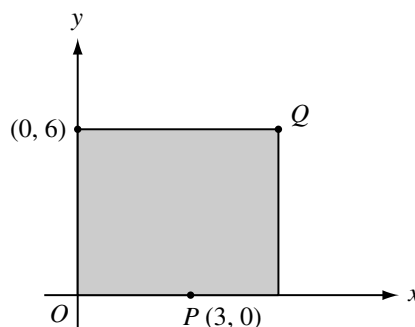
- 33**
- $$m = 4A3$$
- $$n = 7B9$$

Suppose  $m$  and  $n$  are 3-digit integers, as shown, where  $A$  and  $B$  represent digits. If  $m$  is divisible by 3 and  $n$  is divisible by 9, what is the greatest possible value of  $m + n$ ?

- 34** If  $2^{m+1} = 8^4$ , what is the value of  $m$ ?

- 35**
- $$m, n, 9, 5$$

If the product of the four numbers above is 0 and the median of these four numbers is 3.5, what is the average (arithmetic mean) of these four numbers?

**36**

*Note: Figure not drawn to scale.*

In the figure above, if the shaded rectangle has an area of 90 square units, what is the slope of line  $PQ$  (not shown)?

- 37** A water pump, working at a constant rate, fills  $\frac{2}{7}$  of a tank in  $1\frac{1}{3}$  hours. What fraction of the tank will be filled, at this rate, after 3 hours?

- 38** A box contains only red, blue, and yellow crayons. The ratio of red crayons to blue crayons is 2:3, and the ratio of blue crayons to yellow crayons is 2:1. If there is a whole number of each color of crayon in the box, what is the probability that a crayon chosen randomly from the box is blue?



**You may check your work, on this section only, until time is called.**

# Section 5

Time—30 minutes

39 Questions (1–39)

## Directions for “Improving Sentences” Questions

Each of the sentences below contains one underlined portion. The portion may contain one or more errors in grammar, usage, construction, precision, diction (choice of words), or idiom. Some of the sentences are correct.

Consider the meaning of the original sentence, and choose the answer that best expresses that meaning. If the original sentence is best, choose (A), because it repeats the original phrasing. Choose the phrasing that creates the clearest, most precise, and most effective sentence.

EXAMPLE:

The children couldn't hardly believe their eyes.

- (A) couldn't hardly believe their eyes
- (B) would not hardly believe their eyes
- (C) could hardly believe their eyes
- (D) couldn't nearly believe their eyes
- (E) could hardly believe his or her eyes

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

**1** When used intelligently, you can use mnemonics to help you to memorize cumbersome facts.

- (A) you can use mnemonics to help you to memorize cumbersome facts
- (B) cumbersome facts can be memorized with the use of mnemonics
- (C) mnemonics can help you to memorize cumbersome facts
- (D) you can memorize cumbersome facts more easily with mnemonics
- (E) cumbersome facts are more easily memorized by using mnemonics

**2** The annual conference, traditionally used as a forum for presenting new research, instead this year dedicated to resolving theoretical disputes.

- (A) instead this year dedicated to
- (B) was instead this year dedicated to
- (C) being dedicated this year instead to
- (D) was instead dedicated for this year
- (E) instead was dedicated toward this year

**3** Jenna went to have her arm examined by the doctor, which was the time when she was told by him that she would not be able to play soccer for at least six weeks.

- (A) which was the time when she was told by him
- (B) which was when she was told by him
- (C) that then told her
- (D) at which time she was told
- (E) who told her

**4** The effects of a flu epidemic, possibly being exacerbated by social conditions because of the fact that the virus spreads quickly when people live in close quarters.

- (A) epidemic, possibly being exacerbated by social conditions because of the fact that
- (B) epidemic are possibly exacerbated by social conditions due to the fact of
- (C) epidemic can be exacerbated by social conditions, because
- (D) epidemic, possibly being exacerbated by social conditions because
- (E) epidemic can be exacerbated by social conditions due the fact of

GO ON TO THE NEXT PAGE ►►►

**5** One aspect of the play that receives universal acclaim is it analyzes a meaningful social issue with insight while at the same time humor.

- (A) it analyzes a meaningful social issue with insight while at the same time humor
- (B) it uses humor and insight to analyze a meaningful social issue
- (C) it providing a humorous and insightful analysis of a meaningful social issue
- (D) its insightful yet humorous analysis of a meaningful social issue
- (E) its analysis of a meaningful social issue, which is both insightful and humorous

**6** Carl Sagan's engaging presentation of scientific concepts inspired many people who had never before been interested in science.

- (A) people who had never before been interested in science
- (B) people and they had never been interested in science before
- (C) people; previously they had not been interested in science
- (D) people, never having been interested in science before
- (E) people of whom they had not previously been interested in science

**7** Campaigning for over ten consecutive months, the Senator was glad to finally be home with her family.

- (A) Campaigning for over ten consecutive months
- (B) While campaigning for over ten consecutive months
- (C) Over ten consecutive months in which she was campaigning
- (D) Being over ten consecutive months of her campaigning
- (E) Having campaigned for over ten consecutive months

**8** The film is not so much a suspense thriller as being a realistic depiction of modern suburbia.

- (A) being a realistic depiction of
- (B) it is like a realistic depiction of
- (C) a realistic depiction of
- (D) depicting realistically
- (E) realistic in its depiction of

**9** The voyage was not as harrowing as the captain later made it seem; in fact, the trade winds were even stronger than they were predicted to be.

- (A) seem; in fact, the trade winds were even stronger than they were predicted to be
- (B) seem; nevertheless the trade winds were in fact stronger than predicted
- (C) seem so the trade winds were even stronger than the prediction of them
- (D) seem, the trade winds were even stronger than they were predicted to be
- (E) seem; the trade winds being even stronger than they were predicted to be

**10** Although Jermaine had never played handball before, he moved around the court as if playing all his life.

- (A) if playing
- (B) having played
- (C) if from playing
- (D) if he would have been playing
- (E) if he had been playing

**11** Many factors influence the price of crude oil, including advancements in technology, patterns in the weather, and how the global political climate changes.

- (A) how the global political climate changes
- (B) the changing nature of how the political climate is
- (C) changes in the global political climate
- (D) how the political climate is changing globally
- (E) what the changes are in the global political climate

**12** Four of the five symphonies performed in the music festival showcased instruments from the colonial era, particularly that of the *Mississippi Pastoral*.

- (A) festival showcased instruments from the colonial era, particularly that of the *Mississippi Pastoral*
- (B) festival, particularly the *Mississippi Pastoral*, showcased instruments from the colonial era
- (C) festival showcased instruments from the colonial era, which included especially the *Mississippi Pastoral*
- (D) festival, particularly the *Mississippi Pastoral*, showcasing instruments from the colonial era
- (E) festival, particularly the *Mississippi Pastoral*, as a showcase of instruments from the colonial era

**13** The pasta now known as spaghetti originated in China and many though think it came from Italy.

- (A) and many though think it came from
- (B) and not, as many people think, in
- (C) but not, as many people think, from
- (D) not where people think it came from
- (E) but many people think it is

**14** The course requires that students work a great deal in the laboratory and which includes weekly seminars in which they discuss their findings.

- (A) which includes weekly seminars in which they discuss their findings
- (B) discussions of their findings in weekly seminars as well
- (C) discuss their findings in weekly seminars
- (D) discussing their findings in weekly seminars
- (E) to discuss their findings in weekly seminars

**15** Having a stronger will than most preschoolers, Brice's stubbornness often caused her to alienate her classmates.

- (A) Brice's stubbornness often caused her to alienate her classmates
- (B) Brice's classmates were often alienated by her being stubborn
- (C) Brice being stubborn often alienated her classmates
- (D) Brice often alienated her classmates by being stubborn
- (E) and so Brice alienated her classmates because of her stubbornness

**16** The entire legal team had to spend nearly two days revising the contracts to conform with the new changes in the federal industrial regulations.

- (A) to conform with the new changes in
- (B) for them conforming to the new changes in
- (C) in their conformance toward the new changes of
- (D) to get them to conform for the new changes of
- (E) in conforming to the new changes about

**17** Those students who convince themselves that they have the talent to become professional athletes, often neglecting their studies because they feel they will never need to use them.

- (A) athletes, often neglecting
- (B) athletes in often neglecting
- (C) athletes often neglect
- (D) athletes, and so often neglect
- (E) athletes would nevertheless often neglect

**18** Seat belts were extremely unpopular when they were first introduced by Ford Motors, but for those who used them they saved hundreds of lives.

- (A) for those who used them they saved hundreds of lives
- (B) they saved the lives of hundreds of those who used them
- (C) the ones that used them had hundreds of their lives saved by them
- (D) hundreds of the ones who used them had their lives saved by them
- (E) hundreds of lives were saved of those who were the ones using them

**19** The demand for American goods and services increases as the value of the dollar decreases and because of the lowering of trade barriers.

- (A) because of the lowering of trade barriers
- (B) in the lowering of trade barriers
- (C) lower trade barriers
- (D) for lower trade barriers
- (E) as trade barriers are lowered

**20** The professional hockey strike has most acutely affected the officials, most of them depend on the seasonal work for their livelihood.

- (A) of them depend
- (B) of them have been depending
- (C) which depend
- (D) of whom depend
- (E) depend

5

### Directions for "Identifying Sentence Error" Questions

The following sentences may contain errors in grammar, usage, diction (choice of words), or idiom. Some of the sentences are correct. No sentence contains more than one error.

If the sentence contains an error, it is underlined and lettered. The parts that are not underlined are correct.

If there is an error, select the part that must be changed to correct the sentence.

If there is no error, choose (E).

EXAMPLE:

By the time they reached the halfway point  
in the race, most <sup>A</sup>of the runners hadn't hardly  
<sup>B</sup> <sup>C</sup> <sup>D</sup>  
 begun to hit their stride. No error  
<sup>E</sup>

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

**21** Thomas Jefferson invented the dumbwaiter  
<sup>A</sup>  
 in 1795, and they have been used ever since  
<sup>B</sup> <sup>C</sup>  
 as a valuable labor-saving device. No error  
<sup>D</sup> <sup>E</sup>

**22** The sudden rush of investors to withdraw  
<sup>A</sup>  
 their money from their accounts caused  
<sup>B</sup> <sup>C</sup>  
 many banks to have closed their doors for  
<sup>D</sup>  
 several weeks. No error  
<sup>E</sup>

**23** Charles Evans Hughes was not only  
<sup>A</sup>  
an exemplary Chief Justice of the Supreme  
<sup>B</sup>  
 Court and also was a governor of New York  
<sup>C</sup>  
 and the Republican candidate for president  
<sup>D</sup>  
 in 1916. No error  
<sup>E</sup>

**24** The dramatic geometric design  
of the arboretum, which was a stark  
 A B  
departure from the naturalism of  
 C  
 traditional English gardens, attest to  
 D  
 Colcott's love of order and beauty. No error  
 E

**25** Although the delay in the deployment of  
 A  
 troops was a tactful blunder, it did not  
 B C  
 diminish the effectiveness of the general's  
 D  
 overall strategy. No error  
 E

**26** The conference delegates were astonished  
 A  
 not only by the sheer number of protestors,  
 B  
but also by the smooth coordination of the  
 C D  
 many simultaneous demonstrations.  
No error  
 E

**27** The professors usually never cancel classes,  
 A  
 even when there is a snowstorm, because  
 B  
 they believe that knowledge is too important  
 to compromise for anything but the most  
 C D  
 dire circumstances. No error  
 E

**28** Helene found it hard to believe that a  
 A  
 student as diligent as her could ever be  
 B  
singled out as an example of laziness.  
 C D  
No error  
 E

**29** Because it is abundant and burns clean,  
 A B  
 hydrogen is likely to become the preferred  
 C  
 energy source of the future. No error  
 D E

**30** Although it is approximately 5 percent  
more likely that a child will be born male  
 A B  
 than female, the higher mortality rate of  
 C  
 males ensures that the number of adult men  
 and women will be about the same at repro-  
 D  
 ductive age. No error  
 E

**31** Only in the last several years has the econ-  
 A B  
 omic ministers of the neighboring countries  
come to realize that punitive tariffs  
 C  
have hurt the overall economy of the region.  
 D  
No error  
 E

**32** Although it was first used  
by news organizations to transmit photo-  
 A B  
 graphs for publication in the 1920s,  
fax machines did not come into widespread  
 C D  
 use until nearly 60 years later. No error  
 E

**33** Since the itinerary allotted very little time  
 A  
 for unexpected delays, our tour guide  
 insisted that we be at least 30 minutes early  
 B C  
 for any scheduled train departure. No error  
 D E

**34** There is at least two oxygen tanks for each  
 A B  
 climber at the base camp, although rarely  
 C  
does anyone need more than one. No error  
 D E

### Directions for “Improving Paragraphs” Questions

Below is an early draft of an essay. It requires revision in many areas.

The questions that follow ask you to make improvements in sentence structure, diction, organization, and development. Answering the questions may require you to understand the context of the passage as well as the rules of standard written English.

### Questions 35–39 pertain to the following passage.

Line (1) *Although many people consider science and art to be very different fields of endeavor, they came together in many surprising ways during the Renaissance, which dawned in 15th-century Europe.* (2) *One way was through the detailed mechanical and anatomical drawings by brilliant artists like Leonardo da Vinci.* (3) *According to modern painter David Hockney, science and art came together in yet another remarkable way around 1425.* (4) *Even a casual analysis of portraits of this era reveals a sudden and dramatic increase in realism, which Hockney thinks is best explained through science.*

(5) *Whereas previous portraits were characterized by awkwardness, artificiality and formalism, the new portraits by artists like Jan van Eyck and Robert Campin showed natural, almost photorealistic expressions.* (6) *Hockney suggests that the best explanation for the reason about why such a dramatic shift in realism occurred is because of the use of optical devices, which caused them to become more realistic.* (7) *Hockney believes that some artists of this era, most notably van Eyck, used concave lenses for projecting full-color images of his subjects on a flat screen.* (8) *You can see how such a device might work if you take a concave makeup mirror on a sunny morning and angle it to reflect the outside landscape onto your bathroom wall.* (9) *The image is upside-down, but this was no problem; artists could simply trace the image, then invert the canvas and paint.*

(10) *Hockney's theory is still very controversial in the scientific and artistic communities.* (11) *Many scientists argue that the science of optics was not nearly well-developed enough in the 15th century to support the development of the sophisticated instruments*

*that Hockney suggests.* (12) *Many art historians also prefer to believe that van Eyck's realism was achieved through his skilled artistic eye, and not some optical aid.*

- 35** To improve clarity, which of the following changes should be made to sentence 1?
- (A) *they* should be changed to *these fields*  
 (B) *which* should be changed to *of which*  
 (C) *came* should be changed to *will have come*  
 (D) *Although* should be changed to *Because*  
 (E) *consider* should be changed to *consider that*

- 36** Where is the best place to insert the sentence below?

*Another way is through the use of linear perspective, as seen in the architectural drawings of Michelangelo, Brunelleschi, and Rembrandt.*

- (A) between sentences 1 and 2  
 (B) between sentences 2 and 3  
 (C) between sentences 3 and 4  
 (D) before sentence 5, to begin the second paragraph  
 (E) between sentences 5 and 6

- 37** Which of the following is the best version of the underlined portion of sentence 6 (reproduced below)?

*Hockney suggests that the best explanation for the reason about why such a dramatic shift in realism occurred is because of the artists' use of optical devices, which caused them to become more realistic.*

- (A) (as it is now)  
 (B) it was because of optical devices why the paintings of the artists became so much more realistic  
 (C) because of optical devices was why these artists' pictures got more realistic  
 (D) these artists used optical devices to produce dramatically more realistic paintings  
 (E) the reason why these paintings had a dramatic increase in realism is because of the artists' using optical devices

**38**

Which of the following is the best version of the underlined portion of sentence 7 (reproduced below)?

*Hockney believes that some artists of this era, most notably van Eyck, used concave lenses for projecting full-color images of his subjects on a flat screen.*

- (A) used concave lenses for the purpose of projecting full-color images of his subjects onto flat screens
- (B) used concave lenses to project his image in full color on flat screens
- (C) would have used concave lenses for projecting full-color images of their subjects to a flat screen
- (D) using concave lenses to project full-color images of his subject onto a flat screen
- (E) used concave lenses to project full-color images of their subjects onto flat screens

**39**

Which of the following sentences would best conclude the passage on a hopeful note while maintaining the unity of the final paragraph?

- (A) Arguments like this do not really help artists to become better artists, so it is best to leave such matters to the scientists that really care about them.
- (B) The optical instruments that Hockney suggests Renaissance artists used wouldn't be as difficult to make as many people think.
- (C) In the nineteenth century, many artistic movements, like Impressionism, blossomed as a reaction against photo-realism.
- (D) Perhaps future artists will use even better optical tools to create paintings that are almost indistinguishable from photographs.
- (E) Although this controversy continues, it has inspired scientists and artists alike to revisit the art of the Renaissance, and perhaps to appreciate anew the mind of another age.



# ANSWER KEY

Section 1 Critical Reading	Section 3 Critical Reading	Section 2 Math	Section 4 Math	Section 5 Writing
<input type="checkbox"/> 1. B <input type="checkbox"/> 2. E <input type="checkbox"/> 3. C <input type="checkbox"/> 4. B <input type="checkbox"/> 5. A <input type="checkbox"/> 6. D <input type="checkbox"/> 7. E <input type="checkbox"/> 8. B <input type="checkbox"/> 9. B <input type="checkbox"/> 10. D <input type="checkbox"/> 11. C <input type="checkbox"/> 12. E <input type="checkbox"/> 13. D <input type="checkbox"/> 14. C <input type="checkbox"/> 15. D <input type="checkbox"/> 16. E <input type="checkbox"/> 17. E <input type="checkbox"/> 18. B <input type="checkbox"/> 19. C <input type="checkbox"/> 20. D <input type="checkbox"/> 21. D <input type="checkbox"/> 22. A <input type="checkbox"/> 23. A <input type="checkbox"/> 24. C	<input type="checkbox"/> 25. B <input type="checkbox"/> 26. C <input type="checkbox"/> 27. A <input type="checkbox"/> 28. C <input type="checkbox"/> 29. A <input type="checkbox"/> 30. D <input type="checkbox"/> 31. E <input type="checkbox"/> 32. D <input type="checkbox"/> 33. C <input type="checkbox"/> 34. E <input type="checkbox"/> 35. D <input type="checkbox"/> 36. C <input type="checkbox"/> 37. B <input type="checkbox"/> 38. D <input type="checkbox"/> 39. E <input type="checkbox"/> 40. A <input type="checkbox"/> 41. B <input type="checkbox"/> 42. C <input type="checkbox"/> 43. A <input type="checkbox"/> 44. C <input type="checkbox"/> 45. A <input type="checkbox"/> 46. B <input type="checkbox"/> 47. E <input type="checkbox"/> 48. D	<input type="checkbox"/> 1. E <input type="checkbox"/> 2. D <input type="checkbox"/> 3. D <input type="checkbox"/> 4. B <input type="checkbox"/> 5. C <input type="checkbox"/> 6. A <input type="checkbox"/> 7. A <input type="checkbox"/> 8. B <input type="checkbox"/> 9. C <input type="checkbox"/> 10. D <input type="checkbox"/> 11. B <input type="checkbox"/> 12. C <input type="checkbox"/> 13. D <input type="checkbox"/> 14. A <input type="checkbox"/> 15. C <input type="checkbox"/> 16. B <input type="checkbox"/> 17. B <input type="checkbox"/> 18. B <input type="checkbox"/> 19. E <input type="checkbox"/> 20. E	<input type="checkbox"/> 21. B <input type="checkbox"/> 22. C <input type="checkbox"/> 23. B <input type="checkbox"/> 24. E <input type="checkbox"/> 25. E <input type="checkbox"/> 26. A <input type="checkbox"/> 27. D <input type="checkbox"/> 28. C  # Right (A): _____ # Wrong (B): _____ # (A) - $\frac{1}{4}$ (B): _____  <input type="checkbox"/> 29. $\frac{2}{3}$ or .666 or .667 <input type="checkbox"/> 30. 16 <input type="checkbox"/> 31. 93 <input type="checkbox"/> 32. 18 <input type="checkbox"/> 33. 1212 <input type="checkbox"/> 34. 11 <input type="checkbox"/> 35. 4 <input type="checkbox"/> 36. $\frac{1}{2}$ or .5 <input type="checkbox"/> 37. $\frac{9}{14}$ or .642 or .643 <input type="checkbox"/> 38. $\frac{6}{13}$ or .461 or .462	<input type="checkbox"/> 1. C <input type="checkbox"/> 2. B <input type="checkbox"/> 3. E <input type="checkbox"/> 4. C <input type="checkbox"/> 5. D <input type="checkbox"/> 6. A <input type="checkbox"/> 7. E <input type="checkbox"/> 8. C <input type="checkbox"/> 9. A <input type="checkbox"/> 10. E <input type="checkbox"/> 11. C <input type="checkbox"/> 12. B <input type="checkbox"/> 13. B <input type="checkbox"/> 14. C <input type="checkbox"/> 15. D <input type="checkbox"/> 16. A <input type="checkbox"/> 17. C <input type="checkbox"/> 18. B <input type="checkbox"/> 19. E <input type="checkbox"/> 20. D <input type="checkbox"/> 21. B <input type="checkbox"/> 22. D <input type="checkbox"/> 23. C <input type="checkbox"/> 24. D <input type="checkbox"/> 25. B <input type="checkbox"/> 26. E <input type="checkbox"/> 27. A <input type="checkbox"/> 28. B <input type="checkbox"/> 29. B <input type="checkbox"/> 30. E <input type="checkbox"/> 31. B <input type="checkbox"/> 32. C <input type="checkbox"/> 33. E <input type="checkbox"/> 34. A <input type="checkbox"/> 35. A <input type="checkbox"/> 36. B <input type="checkbox"/> 37. D <input type="checkbox"/> 38. E <input type="checkbox"/> 39. E
# Right (A): _____	# Right (A): _____	# Right (A): _____	# Right (A): _____	# Right (A): _____
# Wrong (B): _____	# Wrong (B): _____	# Wrong (B): _____		# Wrong (B): _____
# (A) - $\frac{1}{4}$ (B): _____	# (A) - $\frac{1}{4}$ (B): _____	# (A) - $\frac{1}{4}$ (B): _____		# (A) - $\frac{1}{4}$ (B): _____

## SCORE CONVERSION TABLE

### How to score your test

Use the answer key on the previous page to determine your raw score on each section. Your raw score on any section is equal to the number of correct answers on that section minus  $\frac{1}{4}$  of the number of wrong answers, with the exception of the mathematical "grid-in" section, on which wrong answers are not deducted from your score. Remember to add the raw scores from Sections 1 and 3 to get your Critical Reading raw score, and to add the raw scores from Sections 2 and 4 to get your Math raw score. Write the three raw scores here:

Raw Critical Reading score (Section 1 + Section 3): \_\_\_\_\_

Raw Math score (Section 2 + Section 4): \_\_\_\_\_

Raw Writing score (Section 5): \_\_\_\_\_

Use the table below to convert these to scaled scores.

**Scaled scores:**      Critical Reading: \_\_\_\_\_      Math: \_\_\_\_\_      Writing: \_\_\_\_\_

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

# Detailed Answer Key

## Section I

1. **B** If the remark was only *seemingly offhand*, then it must have actually been *deliberate*. *celebrated* = famous; *calculated* = planned for deliberate effect; *reflexive* = automatic; *conventional* = conforming to custom

2. **E** The term *symbiosis* refers to a situation in which different species act in a mutually beneficial way to one another. *parasitism* = relationship in which one organism harms another by taking advantage of it; *precarious* = dangerous; *antagonism* = hostility; *beneficial* = helpful

3. **C** A career to which one feels called is a *vocation*, which derives from the Latin *vocare*, to call. *embodiment* = a representation in bodily form; *acquisition* = something acquired; *corollary* = a logical deduction

4. **B** The word *although* indicates a contrast between the fact that the value of liberty is *timeless* and the fact that our appreciation of it is not. The first word, logically, should be a synonym of *value* and the second a synonym of *temporary*. *benevolence* = kindness; *fleeting* = short-lived; *anachronisms* = things that are out of place in time; *transitory* = temporary; *diversions* = entertainments; *ephemeral* = short-lived

5. **A** This sentence contains a reiteration or definition. The missing word means *unexpected changes*. *vicissitudes* = unexpected changes; *veneers* = superficial pretenses or outward shows; *evanescence* = quality of being able to vanish quickly

6. **D** The words *by* and *thereby* indicate logical cause-and-effect relationships within the sentence. Use your common sense to complete the sentence in a logical way. What would one expect a change in global climate to do to our ancestors in trees, and what would one expect to happen to human evolution as a result of this? A change in climate would produce a change in food availability, encouraging our ancestors to climb out of the trees and to evolve. *hasten* = to cause to occur more quickly; *resolve* = solve a problem; *spur* = encourage; *impel* = force; *propel* = to push forward

7. **E** If a Senator chose to *affiliate himself with the opposition*, he would have *abandoned* his own party,

which would likely have treated him as a *traitor*. *repudiate* = to reject the validity of; *curator* = director of a museum; *recluse* = hermit; *ascertain* = determine the truth of; *complement* = something that, when added to something else, forms a whole; *expatriate* = one who lives in a country other than his or her native land; *forsake* = abandon; *apostate* = one who abandons one's party or faith

8. **B** If a dictator could not be *assuaged* (pacified), and issued *bellicose* (war-mongering) announcements, then it would seem almost impossible to avoid conflict. *diplomacy* = attempts at peaceful conciliation; *disclosed* = revealed; *conciliation* = appeasement; *averted* = prevented; *tact* = the ability to appreciate the delicacy of a situation and act appropriately; *denigrated* = defamed, disparaged; *belligerence* = antagonism, pugnaciousness; *fore-stalled* = delayed; *jingoism* = excessive and aggressive nationalism; *circumvented* = overcame through clever maneuvering

9. **B** The author states that *students [come] to us from the best high schools in America* (lines 10–11). This suggests that the author is a college professor.

10. **D** The top of the pyramid (as opposed to the rest of the pyramid) is described as the place *where the most profound questions of our era are examined* (lines 35–36).

11. **C** The author of Passage 1 states that *there seems to be no grounding* (lines 17–18) in the fundamental academic skills for college students, but suggests, through the ladder metaphor, that there should be. The author of Passage 2, however, claims that *we are losing too many students in building the pyramid* (of fundamental skills) (lines 37–38).

12. **E** The author of Passage 1 uses the ladder as a metaphor for academic learning, and the author of Passage 2 uses the pyramid as a metaphor.

13. **D** The author of Passage 1 states that he is writing *at the end of a brief introduction* (lines 7–8) and that he is *regarding most of the criticism and much of Fitzgerald's work* (lines 1–2). Therefore, he suggests that he is writing an introduction to a book of criticism.

14. **C** The author explains that in saying that *modern criticism... is... too refined* (lines 12–13), he means that *critics tend to make too much of small things* (lines 14–15).

15. **D** The author states that *there is joy in Fitzgerald's work that should not be passed over* (lines 20–21) and that Edmund Wilson, in particular, recognized this quality in Fitzgerald's work.

16. **E** In saying that *a writer... is commonly charged with having too narrow a range* (lines 29–31), he is saying that the writer is accused of dealing only with a short list of themes.

17. **E** The author suggests that examining Fitzgerald's original manuscripts, which contain *strikeovers, and pencillings, and second and third thoughts* (lines 46–47), can help a writer to appreciate that good writing involves a good deal of reworking.

18. **B** The fifth paragraph of Passage 1 expresses a concern that some Fitzgerald scholarship is *solemn and heavy* (line 51), after expressing in a previous paragraph that Fitzgerald's work is filled with *joy* (line 20). He also suggests that *there should be some licensing procedure that would prevent bad writers... from dealing with Fitzgerald* (lines 52–55). He is therefore showing a concern about the quality and tone of Fitzgerald scholarship.

19. **C** The following sentence goes on to explain that, in his earliest works, Fitzgerald's *optimistic sense of the value of experience is overshadowed by a personal intuition of tragedy* (lines 83–86). In other words, Fitzgerald's novels contain tragic elements.

20. **D** This final paragraph contrasts *those who possess the necessary means* (line 107), that is, the wealthy, with *the disinherited* (line 110), that is, the poor. When the author states that *the disinherited [are] forever barred from the white palace* (lines 110–111), he means that they do not have access to the wealth and privilege of the affluent.

21. **D** The author of Passage 1 would strongly disagree because he states, in lines 63–64, that *Fitzgerald will probably continue to claim the interest of both the general reader and the scholar-critic*.

22. **A** The *joy* mentioned in line 20 of Passage 1 is described as a feature of Fitzgerald's work that *should not be passed over* (line 21) and as something that is *exceedingly rare* (line 24) and has *worth* (line 28), but the *wonder* described in line 86 of Passage

2 is a feature of Fitzgerald's work that, the author of Passage 2 claims, is *chastened by satiric and ironic insights* (line 87). In other words, the author of Passage 1 considers this quality to be a unique and worthy feature of Fitzgerald's work, while the author of Passage 2 considers it to be compromised by intimations of tragedy.

23. **A** The author of Passage 1 suggests that some criticism dwells *upon profundities, complexities, and tragic implications* (lines 21–23) in Fitzgerald's work. The author of Passage 2 states that Fitzgerald's works have been *labeled... by their most recent critics, as darkly pessimistic studies* (lines 74–75).

24. **C** The author of Passage 1 states in the third paragraph, as well as in the fifth, that critics dwell excessively on *profundities, complexities, and tragic implications* (lines 22–23) in Fitzgerald's works, and that too much scholarship on Fitzgerald has become *solemn and heavy* (line 51). He emphasizes Fitzgerald's *extraordinary felicity of expression* (line 62) and suggests that good criticism of Fitzgerald should be likewise felicitous, not heavy and tragic.

## Section 2

1. **E** The area of a rectangle is given by the formula  $A = bh$ , and the area of a triangle is given by the formula  $A = \frac{1}{2}bh$ . So the rectangle has an area of  $(4)(6) = 24$ , and the triangle has an area of  $\frac{1}{2}(4)(4) = 8$ . So the area of the rectangle is 3 times the area of the triangle.

(Chapter 11 Lesson 5: Areas and Perimeters)

2. **D**

The algebraic method:  $x = 2y + 2$   
 Multiply by 6:  $6x = 12y + 12$

This equation states that  $6x$  is 12 more than  $12y$ . (Don't forget to *distribute* the multiplication on the right-hand side!)

Although the algebraic method is the simplest, and should be easy to understand, you can also solve this by simply choosing values for  $x$  and  $y$  that work in the original equation. For instance, if  $x = 2y + 2$ , then  $x$  could be 4 and  $y$  could be 1, because  $4 = 2(1) + 2$ . The question *how much greater is  $6x$  than  $12y$*  now becomes *how much greater is  $6(4)$  than  $12(1)$*  or *how much greater is 24 than 12*? The answer is clearly  $24 - 12 = 12$ .

(Chapter 9 Lesson 1: Solving Equations)

(Chapter 9 Lesson 2: Systems)

(Chapter 8 Lesson 2: The Laws of Arithmetic)

3. **D** First, notice that any number that is divisible by 6 must necessarily be divisible by 2 also, since  $6 = (3)(2)$ . Therefore, the question is simply asking: how many multiples of 6 are there between 10 and 40? The answer choices quickly tell you that the answer can be no more than 6, so it's easy enough to list them: 12, 18, 24, 30, 36.

(Chapter 8 Lesson 7: Divisibility)

4. **B** First notice that 100 hours is a little bit more than 4 days, because  $100 \text{ hours} \times (1 \text{ day}/24 \text{ hours}) = 4 \frac{1}{6} \text{ days}$ , or 4 days and 4 hours. Since 4 days later it will be 4:30 p.m. again, in 4 days and 4 hours it will be 8:30 p.m.

(Chapter 7 Reasoning Skill 3: Finding Patterns)

5. **C** To use the algebraic method, start by defining  $d$  as the number of candy bars that Denise sold (since this is what the question is asking for). If Emily sold four times as many candy bars as Denise, then Emily sold  $4d$  candy bars. If Denise sold 3 times as many as Carrie, then Carrie sold  $\frac{1}{3}d$  candy bars. Since they sold 48 altogether,

$$d + 4d + \frac{1}{3}d = 48$$

$$\text{Simplify:} \quad (16/3)d = 48$$

$$\text{Multiply by } 3/16: \quad d = 9$$

Alternatively, you can simply “test” the answer choices and work by process of elimination. Remember that if you “work backward” like this, you should always start with the middle value, which is almost always at (C). You would simply check whether, if Denise sold 9 candy bars, the total would come out to 48. It does, because Emily would have sold  $(4)(9) = 36$ , and Carrie would have sold  $\frac{1}{3}(9) = 3$ , and  $9 + 36 + 3 = 48$ .

(Chapter 9 Lesson 7: Word Problems)

6. **A** Remember that a straight angle has a measure of  $180^\circ$ . Therefore

$$2x + 3x = 180$$

$$\text{Simplify:} \quad 5x = 180$$

$$\text{Divide by } 5: \quad x = 36$$

Since the  $y^\circ$  angle is “vertical” with the  $2x^\circ$  angle, the two must be congruent, so  $y = 2x = 2(36) = 72$ .

(Chapter 11 Lesson 1: Lines and Angles)

7. **A** The brute force method is to simply evaluate  $2x - x^2$  for each of the “input” values until you get a positive result. It's a bit easier, though, to simply factor the expression and pay attention to the signs of the factors. First, factor the function expression:  $f(x) = 2x - x^2 = x(2 - x)$ . Now check the signs:

$$x \quad (2 - x) \quad x(2 - x)$$

$$(A) \ x = 0.5 \quad + \quad + \quad +$$

$$(B) \ x = 0 \quad 0 \quad + \quad 0$$

$$(C) \ x = -0.5 \quad - \quad + \quad -$$

$$(D) \ x = -1.5 \quad - \quad + \quad -$$

$$(E) \ x = -2.5 \quad - \quad + \quad -$$

(Chapter 9 Lesson 5: Factoring)

(Chapter 10 Lesson 1: New Symbol or Term Problems)

8. **B** You might start by noticing that the line contains the points (0, 3) and (6, 0). Remember that the slope of the line is simply the “rise” between two points divided by the “run” between those same two points. If you walk from (0, 3) to (6, 0), your “run” would be  $6 - 0 = 6$ , and your “rise” would be  $0 - 3 = -3$ . Therefore the slope of this line is  $-3/6 = -1/2$ . Now look at the choices. Notice that all of the equations are in the form  $y = mx + b$ , and in this form  $m$  stands for the slope, and  $b$  stands for the  $y$ -intercept. Since the  $y$ -intercept is clearly 3, the correct equation is (B).

Alternatively, you can just “plug in” the points (0, 3) and (6, 0) to the equations, and eliminate any equations that aren't true for both points. For instance:

Plug in (0, 3)

Plug in (6, 0)

$$(A) \ 3 = -2(0) + 3 \quad (\text{Yes}) \quad 0 = -2(6) + 3 \quad (\text{No})$$

$$(B) \ 3 = -1/2(0) + 3 \quad (\text{Yes}) \quad 0 = -1/2(6) + 3 \quad (\text{Yes})$$

$$(C) \ 3 = -1/2(0) + 6 \quad (\text{No}) \quad 0 = -1/2(6) + 6 \quad (\text{No})$$

$$(D) \ 3 = 1/2(0) + 3 \quad (\text{Yes}) \quad 0 = 1/2(6) + 3 \quad (\text{No})$$

$$(E) \ 3 = 2(0) + 6 \quad (\text{No}) \quad 0 = 2(6) + 6 \quad (\text{No})$$

(Chapter 11 Lesson 4: Coordinate Geometry)

9. **C** You can use simple algebra or plug in a value for  $b$ , whichever is easier. If  $g$  is the total number of girls in the class, and “the number of girls is 6 less than twice the number of boys,” then  $g = 2b - 6$ . The total number of students in the class, therefore, is  $b + g = b + (2b - 6) = 3b - 6$ . But if 2 girls are absent, the number of students present is  $3b - 6 - 2 = 3b - 8$ .

Alternatively, you could just pick a simple value for  $b$ , like 10. If the number of girls is 6 less than twice the number of boys, then there are  $20 - 6 = 14$  girls, for a total of  $10 + 14 = 24$  students. If 2 are absent, there must be 22 present. Notice that choice (C) is the only one that gives a value of 22 when you plug in 10 for  $b$ .

(Chapter 9 Lesson 7: Word Problems)

10. **D**

$$(x + 5)^2 = 0$$

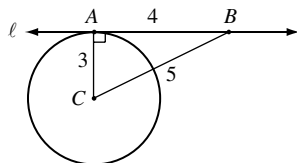
$$\text{Take the square root:} \quad (x + 5) = 0$$

$$\text{Subtract 5:} \quad x = -5$$

Therefore  $(x - 1)(x + 1) = (-5 - 1)(-5 + 1) = (-6)(-4) = 24$

(Chapter 10 Lesson 3: Numerical Reasoning Problems)

11. **B** Be sure to mark up the diagram with the information you are given and the information you can deduce:



Remember that the formula for the circumference of a circle is  $c = 2\pi r$ . Since the circumference of the circle is  $6\pi$ ,

$$6\pi = 2\pi r$$

$$\text{Divide by } 2\pi: \quad 3 = r$$

Also, recall that any tangent to a circle is perpendicular to the radius that touches the point of tangency. Therefore,  $\triangle ABC$  is a right triangle with legs of 3 and 4. To find  $BC$ , the hypotenuse, you might notice that this is the common 3-4-5 triangle, or you can simply use the Pythagorean theorem:

$$3^2 + 4^2 = (BC)^2$$

$$\text{Simplify:} \quad 25 = (BC)^2$$

$$\text{Take the square root:} \quad 5 = BC$$

(Chapter 11 Lesson 8: Circles)

(Chapter 11 Lesson 3: The Pythagorean Theorem)

12. **C** Since the integers are consecutive and their sum is  $-10$ , you might be able to find them simply by guessing and checking. Or if you prefer, you can find them algebraically. Just call the least of the integers  $x$ . Then, the statement that the five consecutive integers have a sum of  $-10$  becomes

$$x + (x + 1) + (x + 2) + (x + 3) + (x + 4) = -10$$

$$\text{Simplify:} \quad 5x + 10 = -10$$

$$\text{Subtract 10:} \quad 5x = -20$$

$$\text{Divide by 5:} \quad x = -4$$

Therefore the five numbers are  $-4$ ,  $-3$ ,  $-2$ ,  $-1$ , and  $0$ . Now you are to find the greatest possible *product* of *three* of these numbers. All the numbers are negative except  $0$ . The product of any three negatives is always negative, but the product of any number and  $0$  is always  $0$ . Therefore, the greatest product you can get by multiplying three of these numbers is  $0$ .

(Chapter 10 Lesson 3: Numerical Reasoning Problems)

13. **D** Just focus on the Wednesdays. Since the first of the month is a Monday, the first Wednesday

must be the 3rd. Since Wednesdays happen to occur every 7 days, the other Wednesdays are on the 10th, 17th, and 24th. (There is no 31st because there are only 30 days.) Therefore 4 of the 30 days are Wednesdays, so the probability is  $4/30 = .1333\dots$

(Chapter 10 Lesson 3: Numerical Reasoning Problems)

(Chapter 7 Reasoning Skill 3: Finding Patterns)

14. **A** Remember that  $|x|$  means the distance from  $x$  to  $0$  on the number line. So if  $|x| > 2$ , then either  $x > 2$  or  $x < -2$ . (Think about it.) So two simple *possible* values of  $x$  are  $3$  and  $-3$ . If  $x$  can be  $-3$ , then statements I and III are not necessarily true since  $-3 > 0$  is not true and  $(-3)^3 > 2$  is not true. If you eliminate every answer choice that contains statement I or statement III, you are left only with (A). Statement II must be true because if you square both sides of  $|x| > 2$ , you get  $x^2 > 4$ , and if  $x^2$  is greater than  $4$ , it must certainly also be greater than  $2$ .

(Chapter 9 Lesson 6: Inequalities, Absolute Values, and Plugging In)

15. **C** Since marbles only come in whole numbers, if the number of red marbles is  $5/6$  the number of white marbles, then the number of red marbles must be a multiple of  $5$ . (Just think of the ways it could happen:  $5$  red and  $6$  white,  $10$  red and  $12$  white, etc.) Likewise, if the number of red marbles is  $6/7$  the number of blue marbles, then the number of red marbles must also be a multiple of  $6$ . Since the smallest multiple of  $5$  and  $6$  is  $30$ , this is the least possible number of red marbles. Since the number of red marbles is  $5/6$  the number of white marbles,

$$30 = (5/6)w$$

$$\text{Multiply by } 6/5: \quad 36 = w$$

Since the number of red marbles is  $6/7$  the number of blue marbles,

$$30 = (6/7)b$$

$$\text{Multiply by } 7/6: \quad 35 = b$$

So the least possible total number of marbles is  $30 + 36 + 35 = 101$ .

(Chapter 8 Lesson 3: Fractions)

(Chapter 8 Lesson 4: Ratios and Proportions)

16. **B** A sequence in which each term is equal to the previous term times a constant (a fixed number) is called a *geometric* sequence. The number you must multiply each time is the common ratio,  $b/a$ , which is also equal to  $a/8$  and  $27/b$ . You might simply test the answer choices, starting with (C), to see how the sequence works out. For instance, testing (C)  $3.375$  means multiplying the first term,

8, by 3.375 to get the next term, and so on. This gives you

8, 27, 91.125, 307.55

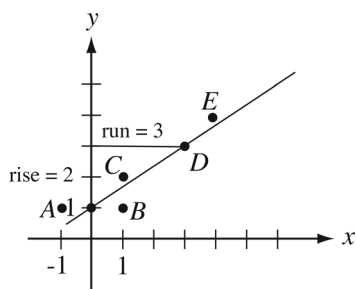
but this doesn't work, because the *fourth* term should be 27. Therefore, 3.375 is too big, and so we can eliminate (C), (D), and (E). Next, try choice (B). Multiplying by 1.5 each time works perfectly:

8, 12, 18, 27

So the answer is (B).

(Chapter 7 Reasoning Skill 3: Finding Patterns)

17. **B** You should be able to sketch a quick graph of this line using one of two methods. The first way is to use the fact that, when a linear equation is in the form  $y = mx + b$ , the slope is  $m$  and the  $y$ -intercept is  $b$ . So the slope of this line is  $2/3$  and its  $y$ -intercept is 1. First plot a point at the  $y$ -intercept. Then move up 2 and right 3 and plot a second point. Then connect the points:



The other simple method is to choose easy values for  $x$ , like 0 and 3, and plug these into the equation to get the corresponding values of  $y$ . Just as in the previous method, this will give you the points (0, 1) and (3, 3). Now simply plot the points in the choices and notice that only choice (B) (1, 1) is below the line.

(Chapter 11 Lesson 4: Coordinate Geometry)

18. **B** First you must notice that 27 is a power of 3:  $3^3 = 27$ . Use this to make a substitution:  $3^{n-1} = 27^{-1}$

Substitute  $3^3$  for 27:  $3^{n-1} = (3^3)^{-1}$

Simplify:  $3^{n-1} = 3^{-3}$

Equate the powers:  $n - 1 = -3$

Add 1:  $n = -2$

(Chapter 9 Lesson 3: Working with Exponents)

19. **E** You can do this algebraically or by plugging in. Here, perhaps plugging in is easier. Notice that if you plug in  $x = 1$ , you get  $y = 1 + 1/1 = 2$ . Now, the question asks for the value of  $x^2 + 1/x^2$  in terms

of  $y$ . Since we assumed that  $x = 1$ ,

$$x^2 + 1/x^2 = (1)^2 + 1/(1)^2 = 2$$

Therefore, we want to know which choice has a value of 2 when we plug in  $y = 2$ . Evaluate each choice:

$$(A) \ y^2 + 2 = (2)^2 + 2 = 6$$

$$(B) \ y^2 + 1 = (2)^2 + 1 = 5$$

$$(C) \ y^2 = (2)^2 = 4$$

$$(D) \ y^2 - 1 = (2)^2 - 1 = 3$$

$$(E) \ y^2 - 2 = (2)^2 - 2 = 2$$

Clearly, only choice (E) gives the value we want: 2.

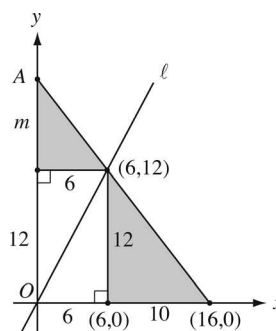
You can also solve this problem algebraically:

$$\begin{aligned} (x + 1/x) &= y \\ \text{Square both sides: } (x + 1/x)(x + 1/x) &= y^2 \\ \text{FOIL: } x^2 + x/x + x/x + 1/x^2 &= y^2 \\ \text{Simplify: } x^2 + 1 + 1 + 1/x^2 &= y^2 \\ \text{Simplify: } x^2 + 2 + 1/x^2 &= y^2 \\ \text{Subtract 2: } x^2 + 1/x^2 &= y^2 - 2 \end{aligned}$$

(Chapter 9 Lesson 6: Inequalities, Absolute Values, and Plugging In)

(Chapter 9 Lesson 1: Solving Equations)

20. **E** Be sure to mark up the diagram with any given information and any information you can deduce:



First, since the slope of the line is 2 and the line passes through (0, 0), it must also pass through (6, 12). (Remember  $\text{slope} = \text{rise}/\text{run} = 12/6 = 2$ .) So, label the top right corner of the rectangle (6, 12). Next, notice that the two shaded right triangles must be similar, because all of their corresponding angles are congruent by the parallel lines theorem. Therefore all of the corresponding sides are proportional:

$$\frac{m}{6} = \frac{12}{10}$$

$$\text{Multiply by 6: } m = 7.2$$

Therefore, the  $y$ -coordinate of point A is  $12 + 7.2 = 19.2$

(Chapter 11 Lesson 1: Lines and Angles)  
 (Chapter 11 Lesson 4: Coordinate Geometry)  
 (Chapter 11 Lesson 6: Similar Figures)

### Section 3

25. **B** If Harold is *unlike* other farmers, then he thinks of rain as something contrasting a *benefit*. *hardship* = a trying situation

26. **C** A *perfectionist* is one who cannot accept flaws in his or her work. Therefore, the tendency to destroy works that are less than perfect would be a hallmark of perfectionism. *paragon* = prime example; *mediocre* = of average quality; *proponent* = supporter, advocate; *aesthetic* = relating to a sense of the beautiful; *advocate* = one who speaks out for a cause; *monetary* = pertaining to money

27. **A** Clearly, Joseph has the tendency to *pick fights*. *belligerence* = eagerness to fight; *diligence* = persistent application to one's work; *fortitude* = strength; *restraint* = ability to control one's urges; *eloquence* = ability to speak fluently and persuasively

28. **C** *Discounted merchandise and free gift wrapping* are things that are likely to appeal to shoppers. If the shoppers were *angry*, such offers seem to be attempts to *appease* their anger. *exculpate* = free from blame; *impede* = hinder the progress of; *mollify* = appease, soothe the anger of; *pilfer* = steal; *abridge* = to shorten the length of a written work

29. **A** *Severe immigration restrictions* would logically render a country *less vulnerable* to foreign terrorists, but would also *hinder* the *influx* (inward flow) of creative ideas. *pervious* = penetrable; *stem* = stop the flow of; *impregnable* = incapable of being penetrated; *hasten* = to cause to happen sooner; *potent* = strong

30. **D** This passage compares and contrasts *two kinds of evidence* (lines 5–6) in history: *oral traditions and archaeology* (lines 4–5).

31. **E** The *nonmaterial world of ideas, values and beliefs* (lines 15–16) is said to be provided by *oral sources* (line 14). This *nonmaterial world*, according to the passage, is worthy of study but only ascertainable through oral traditions.

32. **D** The overall purpose of the passage is to criticize irrationality. The first sentence characterizes the *irrational tidal waves of the last big war* (lines 2–3) as causing *agony and despair*. It then goes on to bemoan the fact that *man is not rational enough*

(lines 12–13) to take advantage of recent advancements and that reality *does not conform to our rational prescriptions* (line 22).

33. **C** The parenthetical comment states that the poor *might have most reason for such reactions* (as unrest and violence). In other words, the poor are the most justified in acting rebelliously.

34. **E** The author states *I go off down to the river to get my strength back* (lines 28–29). In other words, the river rejuvenates him.

35. **D** The author states that *without that "everything," I can't get along either*. The "everything" that he is referring to is the *traffic* (line 4), which he says gets on his nerves, and the *people and things* (lines 16–17) that he encounters every day. In other words, he needs these things, but occasionally needs to get away from them also.

36. **C** The *thing that we haven't managed to pull out of our dusty old dictionaries* (lines 27–28) is the *recreation* (line 22) or the *rest [that helps one to get one's] strength back regularly* (line 26), in other words, something that helps to restore one's strength.

37. **B** The *constant flight from open conflict* (lines 66–67) is the *escape from or fleeing from conflict*.

38. **D** The author states that work has *lost its original meaning long since its primeval, ennobling, creative function* (lines 72–73). In other words, long ago work was meant as a creative endeavor, and it has lost its meaning as such.

39. **E** This paragraph describes how the author's *appointment with the river has expired* (lines 83–84) because the city is *waking up* (line 82) behind him. The *pensioners* (line 90) are mentioned as examples of those people and things that are intruding on his solitude at the river.

40. **A** The passage as a whole describes the conflict that the narrator feels between his need for *people and things* (lines 16–17) and the tendency of these things to occasionally *get [him] down* (line 17), whereupon he seeks solitude and rejuvenation at the river. Therefore, the main conflict is between solitude and sociability.

41. **B** The first line of the passage states that *according to Kant, his reading of David Hume awakened him from his dogmatic slumber and set him on*



the road to becoming the “critical philosopher” (lines 1–4). In other words, Hume’s writings inspired Kant in his philosophical thinking.

42. **C** The term *dogmatic* means very rigid and preachy in one’s views. By saying that he was *awakened... from his dogmatic slumber* (lines 2–3), the author is stating that Kant was far more rigid in his thinking before reading the work of David Hume.

43. **A** The passage states that the *theme* (line 35) of the “Transcendental Dialectic” is *this inevitable failure* (lines 35) of *all theoretical attempts to know things-in-themselves* (lines 33–34).

44. **C** According to the passage, in *Critique of Pure Reason*, Kant *shows the necessity of a belief in [the existence of God, freedom, and immortality] in his moral philosophy* (lines 43–45). In other words, Kant’s moral system required the belief in free will.

45. **A** According to the passage, Kant’s *categorical imperative* (lines 46–47) is to “Act as if the maxim from which you act were to become through your will a universal law” (lines 47–49). In other words, act as if the principles behind your acts were the principles that everyone used; that is, they applied to all human beings.

46. **B** The author states that, according to Kant, we *do not act infallibly in accordance with [the categorical imperative]* (lines 53–54) because we *almost always act according to inclination* (lines 55–56); that is, we do what our subjective needs and desires compel us to do. Another way of saying this is that our acts are necessarily *subjectively contingent* (line 58), that is, we can only act according to our “subjective” needs and desires, so we cannot do infallibly what is *objectively necessary* (line 57).

47. **E** The *bridge* (line 73) is one *between the sensible and the intelligible worlds* (line 69), so it is a bridge between what can be sensed and what can be understood.

48. **D** The final paragraph describes what Kant *went on to state* in *Critique of Practical Reason*. It then summarizes another later work of Kant, the *Critique of Judgment*.

## Section 4

21. **B** A square with perimeter of 20 centimeters must have sides of length  $20 \div 4 = 5$  centimeters.

Since the area for a square is given by the formula  $A = s^2$ , the area of the square is  $5^2 = 25$  square centimeters, and one-half of 25 is 12.5.

(Chapter 11 Lesson 5: Areas and Perimeters)

22. **C** You can solve this one algebraically or by simply testing the choices. To solve algebraically, translate into an equation. If the number is equal to  $1/3$  of its square,

$$\begin{array}{ll} & x = (1/3)x^2 \\ \text{Multiply by 3:} & 3x = x^2 \\ \text{Subtract } 3x: & 0 = x^2 - 3x \\ \text{Factor:} & 0 = x(x - 3) \\ \text{Use the 0 product property:} & x = 0 \text{ or } x = 3 \end{array}$$

Since 0 is not among the choices, the answer must be (C) 3.

Alternatively, you can simply test the choices, taking one-third of the square of each number until you get a result that equals the original number. Of course, that works with 3 because  $3 = (1/3)(3^2)$ .

(Chapter 9 Lesson 1: Solving Equations)

23. **B** This one is probably most easily solved algebraically. Since each pile has  $k$  more checkers than the previous pile and the first pile has 3 checkers, the piles have 3,  $3 + k$ ,  $3 + 2k$ , and  $3 + 3k$  checkers, respectively. Since the total number of checkers is 30,

$$\begin{array}{ll} 3 + (3 + k) + (3 + 2k) + (3 + 3k) = 30 \\ \text{Simplify:} & 12 + 6k = 30 \\ \text{Subtract 12:} & 6k = 18 \\ \text{Divide by 6:} & k = 3 \end{array}$$

(Chapter 9 Lesson 7: Word Problems)

24. **E** If a number is equal to  $3/5$  of itself plus 240,

$$\begin{array}{ll} & x = (3/5)x + 240 \\ \text{Subtract } (3/5)x: & (2/5)x = 240 \\ \text{Multiply by } 5/2: & x = 600 \end{array}$$

(Chapter 9 Lesson 1: Solving Equations)

(Chapter 9 Lesson 7: Word Problems)

25. **E** The total number of books sold (in thousands) is  $500 + 325 + 375 = 1,200$ . Since 500 nonfiction books have been sold, and  $x$  corresponds to the central angle of the sector representing nonfiction

books, you can set up a proportion:

$$\frac{\text{Part}}{\text{Whole}} = \frac{500}{1,200} = \frac{x}{360}$$

Cross-multiply:  $180,000 = 1,200x$   
 Divide by 1,200:  $150 = x$

(Chapter 8 Lesson 4: Ratios and Proportions)

**26. A** It's helpful to know that if a set of numbers is evenly spaced, its median always equals its average (arithmetic mean). Since 10 consecutive even integers are certainly evenly spaced, statement I must be true. [This eliminates choice (B).] To check statements II and III, you should take a closer look at set S. You can find the 10 numbers fairly easily by using what we just deduced, namely, that 23 must be the median, and so it splits the set in half. Therefore set S must consist of the five even integers just before 23 and the five even integers just after 23:

14, 16, 18, 20, 22, 24, 26, 28, 30, and 32

Clearly the difference between 32 and 14 is greater than 10, so statement II is not true. Also, set S contains two multiples of 5: 20 and 30. Therefore, statement III is not true, and the answer is (A).

(Chapter 10 Lesson 2: Mean/Median/Mode Problems)

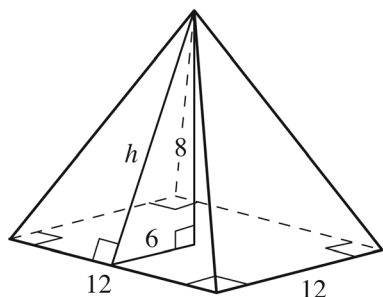
**27. D**

$$2^n = \frac{2}{2^k}$$

Multiply by  $2^k$ :  $(2^n)(2^k) = 2$   
 Simplify:  $2^{n+k} = 2^1$   
 Equate exponents:  $n + k = 1$

(Chapter 9 Lesson 3: Working with Exponents)

**28. C** Since the area of the square base is 144, the length of one side of the square must be  $\sqrt{144} = 12$ . This is also the base of one of the triangular faces. Let's call the height of this triangular face  $h$ . Notice that  $h$  is also the hypotenuse of a right triangle with legs of 6 and 8. (One leg is the height of the pyramid, which we know is 8, and the other leg is half the length of the side of the square.)



Next, notice that this right triangle is simply a multiple of a 3-4-5 triangle, so its sides have length 6-8-10. Alternatively, you can use the Pythagorean theorem to find  $h$ :

$$6^2 + 8^2 = h^2$$

Simplify:  $36 + 64 = h^2$   
 Simplify:  $100 = h^2$   
 Take the square root:  $10 = h$

Thus the triangular face has a base of 12 and a height of 10, so its area is  $(1/2)(12)(10) = 60$  square inches.

(Chapter 11 Lesson 3: The Pythagorean Theorem)

(Chapter 11 Lesson 5: Areas and Perimeters)

(Chapter 11 Lesson 7: Volumes and 3-D Geometry)

**29.  $2/3$  or .666 or .667**

$1/4$  of 80 is  $(1/4)(80) = 20$  and  $1/3$  of 90 is  $(1/3)(90) = 30$ .  $20 \div 30 = 2/3$  or .666...

(Chapter 8 Lesson 1: Numbers and Operations)

**30. 16**

Using the definition,  $5 \circ 3 = (5 + 3)(5 - 3) = (8)(2) = 16$ .

(Chapter 7 Reasoning Skill 1: Finding Patterns)

**31. 93** Recall that the sum of the angles in a quadrilateral is always  $360^\circ$ , because a diagonal divides the quadrilateral into two triangles with  $180^\circ$  each. Therefore

$$x + x + x + y = 360$$

Substitute:  $89 + 89 + 89 + y = 360$   
 Simplify:  $267 + y = 360$   
 Subtract 267:  $y = 93$

(Chapter 11 Lesson 2: Triangles)

**32. 18** We know that, for some value of  $x$ ,  $f(x) = 6$ , and this is the largest possible output of the function. Let's say that the value of  $x$  for which this is true is 1, so that  $f(1) = 6$ . Now we are asked to find the greatest possible value of  $3f(x - 1)$ . Notice that if we substitute  $x = 2$ , we get  $3f(2 - 1) = 3f(1) = 3(6) = 18$ . Since the value of  $f(x)$  can be no greater than 6, this must be the greatest possible value of  $3f(x - 1)$ .

(Chapter 10 Lesson 1: New Symbol or Term Problems)

**33. 1,212** It is convenient to know that if a number is divisible by 3, the sum of its digits will also be a multiple of 3. Likewise, if a number is divisible by 9, the sum of its digits will also be a multiple of 9. (Don't generalize this to any other factors, though; this is only true for numbers divisible by 3 or 9. For instance, the sum of the digits of a multiple of 5, like 25, is NOT necessarily a multiple of 5.) Therefore, we know that  $4 + A + 3 = 7 + A$  is a

multiple of 3. The largest  $A$  could be, then, is 8, because  $7 + 8 = 15$  is a multiple of 3. Also,  $7 + B + 9 = 16 + B$  is a multiple of 9, so the largest  $B$  could be is 2, since  $16 + 2 = 18$  is a multiple of 9. (Remember that  $A$  and  $B$  represent single digits.) Therefore, the greatest that  $m + n$  could be is  $483 + 729 = 1,212$ .

(Chapter 8 Lesson 7: Divisibility)

34. **11**

$$\begin{array}{ll} \text{Write 8 as a power of 2:} & 2^{m+1} = 8^4 \\ \text{Simplify:} & 2^{m+1} = (2^3)^4 \\ \text{Equate the exponents:} & m + 1 = 12 \\ \text{Subtract 1:} & m = 11 \end{array}$$

(Chapter 9 Lesson 3: Working with Exponents)

35. **4** If the product of four numbers is 0, then one of the numbers must be 0. If the median of the numbers is 3.5, then two of the numbers must be greater than 3.5, and two of the numbers must be less than 3.5. So, in increasing order, the numbers are 0,  $n$ , 5, 9. Since the median is the average of the two middle numbers,

$$\begin{array}{ll} & (n + 5)/2 = 3.5 \\ \text{Multiply by 2:} & n + 5 = 7 \\ \text{Subtract 5:} & n = 2 \end{array}$$

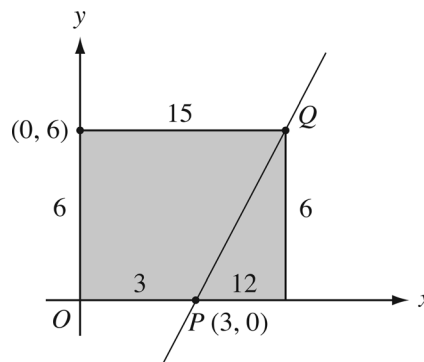
So the average (arithmetic mean) of the four numbers is  $(0 + 2 + 5 + 9)/4 = 16/4 = 4$ .

(Chapter 10 Lesson 2: Mean/Median/Mode Problems)

36. **1/2 or .5** Notice first that the height of the rectangle is 6. The area of a rectangle is given by the formula  $A = bh$ , so if the area of the rectangle is 90, then

$$\begin{array}{ll} & 90 = 6b \\ \text{Divide by 6:} & 15 = b \end{array}$$

So the base is 15. Write this into the diagram. The distance from  $O$  to  $P$  is 3, so the other part of the base is  $15 - 3 = 12$ . The slope of line  $PQ$  is the “rise” divided by the “run,” which is  $6/12 = 1/2$ . Also, you can use the slope formula  $\text{slope} = (y_2 - y_1)/(x_2 - x_1)$  with the two points on the line  $(3, 0)$  and  $(15, 6)$ :  $(6 - 0)/(15 - 3) = 6/12 = 1/2$ .



(Chapter 11 Lesson 6: Similar Figures)

37. **9/14 or .642 or .643** The phrase *at this rate* indicates that you can set up a proportion of equivalent rates:

$$\begin{array}{l} \frac{\frac{2}{7} \text{ tank}}{1\frac{1}{3} \text{ hours}} = \frac{x \text{ tank}}{3 \text{ hours}} \\ \text{Simplify mixed number:} \quad \frac{\frac{2}{7} \text{ tank}}{\frac{4}{3} \text{ hours}} = \frac{x \text{ tank}}{3 \text{ hours}} \end{array}$$

$$\begin{array}{ll} \text{Cross-multiply:} & (3)\left(\frac{2}{7}\right) = \left(\frac{4}{3}\right)x \\ \text{Simplify:} & \frac{6}{7} = \frac{4x}{3} \\ \text{Multiply by 21:} & 18 = 28x \\ \text{Divide by 28:} & 18/28 = x \\ \text{Simplify:} & 9/14 = x \end{array}$$

(Chapter 10 Lesson 4: Rate Problems)

38. **6/13 or .461 or .462** Since there is a whole number of crayons in the box, saying that the ratio of red crayons to blue crayons is 2:3 implies that the number of red crayons is a multiple of 2 and the number of blue crayons is a multiple of 3. Likewise, saying that the ratio of blue crayons to yellow crayons is 2:1 implies that the number of blue crayons is a multiple of 2 and the number of yellow crayons is a multiple of 1. So, the number of blue crayons must be a multiple of both 2 and 3. The smallest such number is 6, so let's assume that there are 6 blue crayons in the box. Since  $r:6 = 2:3$ , there must be 4 red crayons in the box, and since  $6:y = 2:1$ , there must be 3 yellow crayons in the box. Therefore, there are  $6 + 4 + 3 = 13$  crayons in the box, and since 6 of them are blue, the probability of choosing a blue

at random is 6/13.

(Chapter 10 Lesson 5: Counting Problems)

(Chapter 10 Lesson 6: Probability Problems)

(Chapter 8 Lesson 4: Ratios and Proportions)

## Section 5

1. **C** The first phrase of the sentence, which is not underlined (and therefore cannot be changed), modifies things that are *used intelligently*. The law of proximity says that these things should follow the modifying phrase. The context of the sentence indicates that these things are *mnemonics* (not *you* or *facts*), and so (C) is the best choice.

(Chapter 13 Lesson 8: Other Misplaced Modifiers)

2. **B** The original sentence contains no verb. The core of the sentence should state that *the annual conference ... was dedicated to ... resolving disputes*. Choices (B), (D), and (E) make this correction, but since choices (D) and (E) contain errors in idiom—*dedicated for* and *dedicated toward* instead of *dedicated to*—the best choice is (B).

(Chapter 13 Lesson 2: Trimming Sentences)

(Chapter 13 Lesson 10: Idiom Errors)

3. **E** The original sentence is unnecessarily wordy and suggests that *the doctor was a time*, which is illogical. Choice (E) uses 70% fewer words to say everything that the original phrase is trying to say, and so is much better.

(Chapter 13 Lesson 12: Other Problems with Modifiers)

4. **C** The original “sentence” is not a complete thought, because it lacks a verb. It is also needlessly wordy: why say *because of the fact that* when *because* will do? Choice (C) is the most concise, yet expresses a clear and complete thought.

(Chapter 13 Lesson 12: Other with Modifiers Problems)

(Chapter 13 Lesson 15: Coordinating Ideas)

5. **D** This sentence has the structure *A is B*, where *A* is *one aspect of the play*. Therefore, *B* must be a phrase that is logically and grammatically equivalent to *one aspect of the play*. As it stands, *B* is an independent clause, but should be a noun phrase, because *A* is a noun phrase. Choices (D) and (E) are noun phrases, but choice (E) suggests that the *social issue*, rather than the *play*, is *humorous*. Therefore, the best choice is (D).

(Chapter 13 Lesson 15: Coordinating Ideas)

6. **A** The original phrasing is clear, complete, logical, and concise.

7. **E** The Senator has completed campaigning, since she is now *home with her family*. Therefore, the present participle *campaigning* is incorrect and should instead be the present perfect participle: *having campaigned*.

(Chapter 13 Lesson 9: Tricky Tenses)

8. **C** This sentence contains the parallel phrasing *not so much A as B*, and so *A* and *B* must have the same grammatical structure. Since *A* is the common noun phrase *a suspense thriller*, *B* should also be a common noun phrase, as in choice (C).

(Chapter 13 Lesson 3: Parallelism)

9. **A** The original phrasing is clear, complete, logical, and concise.

10. **E** Since the sentence suggests that Jermaine was playing at that time, and as if he had played over an extended time in the past, the tense should be the past perfect progressive: *had been playing*.

(Chapter 13 Lesson 9: Tricky Tenses)

11. **C** This sentence lists the factors that influence the price of crude oil, and so the items in this list should follow the law of parallelism. The first two items in the list have the form “*something in something*”: *advancements in technology* and *patterns in the weather*, so the third item should have the same form: *changes in the global political climate*. Also, choice (C) is the most concise of the choices.

(Chapter 13 Lesson 3: Parallelism)

12. **B** The *Mississippi Pastoral*, since it is italicized, must be the title of something. The context of the sentence makes it clear that it must be one of the *symphonies* performed in the festival. This modifying phrase is so far from the word it modifies, however, that its meaning is unclear. Choice (B) moves this phrase closer to the word it modifies, and so is the best choice.

(Chapter 13 Lesson 8: Other Misplaced Modifiers)

13. **B** The sentence shows a contrast between a fact and a misconception. All of the choices indicate this contrast in some way, but only choice (B) uses the correct idiom: it *originated in* China and so did not *originate in* Italy.

(Chapter 13 Lesson 5: Pronoun Agreement)

14. **C** The sentence indicates that the students do two things, so these should have parallel phrasing.

The course requires that *students work* and that *students discuss*.

(Chapter 13 Lesson 3: Parallelism)

15. **D** The opening phrase is a participial phrase that modifies *Brice*, and not *Brice's stubbornness*, so the original phrase dangles. Choices (C) and (D) correct the dangling problem, but (D) is the only one that is phrased logically.

(Chapter 13 Lesson 7: Dangling and Misplaced Participles)

16. **A** The original phrasing is clear, complete, logical, and concise.

17. **C** The original "sentence" does not convey a complete thought because it does not contain a verb. Choice (C) corrects this problem most concisely.

(Chapter 13 Lesson 2: Trimming Sentences)

18. **B** The original phrasing is unidiomatic. The seat belts do not save lives *for* people, but save the lives *of* people. Choice (B) is the most concise yet idiomatic choice.

(Chapter 13 Lesson 10: Idiom Errors)

19. **E** The original phrasing is not parallel. If the demand increases *as the value of the dollar increases*, then it also increases *as trade barriers are lowered*.

(Chapter 13 Lesson 3: Parallelism)

20. **D** As it is originally phrased, the sentence is a run-on, because two independent clauses are joined with only a comma. By changing this phrasing to that in choice (D), the second clause becomes dependent, and this fixes the problem. Choice (C) also creates a dependent clause, but it is illogical—officials are people, not things.

(Chapter 13 Lesson 15: Coordinating Ideas)

21. **B** Since the *dumbwaiter* is only one thing, choice (B) should be changed to *which has been*.

(Chapter 13 Lesson 5: Pronoun Agreement)

22. **D** Since the closing happened after the rush of investors, the use of the perfect infinitive *to have closed* is illogical. It should be changed to *to close*.

(Chapter 13 Lesson 9: Tricky Tenses)

23. **C** This sentence suggests the parallel phrasing *not only A but also B*. This requires changing choice (C) to *but also*.

(Chapter 13 Lesson 3: Parallelism)

24. **D** The subject of the sentence is *geometric design*, which is singular. Therefore the verb should be *attests to*.

(Chapter 13 Lesson 1: Subject-Verb Disagreement)

25. **B** The word *tactful* means *sensitive to the needs of others in delicate social situations*, and so is illogical in this context. The correct word here is *tactical*, which means *pertaining to tactics*.

(Chapter 13 Lesson 11: Diction Errors)

26. **E** This sentence is correct.

27. **A** The phrase *usually never* is logically contradictory. More logical phrasings that convey the right idea are *hardly ever* or *almost never*.

(Chapter 13 Lesson 12: Other Problems with Modifiers)

28. **B** The correct phrasing is *as she (is)* because the pronoun is the subject of an implied verb

(Chapter 18 Lesson 6: Pronoun Case)

29. **B** The word should be *cleanly*, because it is an adverb modifying the verb *burns*.

(Chapter 13 Lesson 12: Other Problems with Modifiers)

30. **E** The sentence is correct.

31. **B** The subject of the verb is *ministers*, which is plural. The correct verb conjugation, then, is *have*.

(Chapter 13 Lesson 1: Subject-Verb Disagreement)

32. **C** This phrase is the antecedent of the pronoun *it*, which is singular. Therefore it should be *the fax machine*.

(Chapter 13 Lesson 5: Pronoun Agreement)

33. **E** The sentence is correct.

34. **A** The subject of the verb is *two oxygen tanks*, which is plural. The correct phrasing, then, is *there are*.

(Chapter 13 Lesson 1: Subject-Verb Disagreement)

35. **A** The pronoun *they* has an ambiguous antecedent: it could refer to *many people* or *different fields*. Therefore, rephrasing it to *these fields* clarifies the sentence.

(Chapter 13 Lesson 5: Pronoun Agreement)

36. **B** This sentence should be placed between sentence 2 and sentence 3, because sentence 2 describes *one way*, and the inserted sentence follows logically

with *another way*. The inserted sentence must also precede sentence 3, because the inserted sentence provides only background information to the central idea of the passage, which is introduced in sentence 3.

(Chapter 13 Lesson 15: Coordinating Ideas)

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37. **D** The original phrasing is awkward and wordy. Choice (D) is far more concise, and is the clearest of the alternatives because it uses the active voice, a strong subject, and a concrete subject.

(Chapter 13 Lesson 15: Coordinating Ideas)

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38. **E** The original phrasing contains two errors in idiom: *used for projecting* and *projecting on*. The correct idioms are *used to project* and *project onto*. Also, since the sentence discusses many artists and many images, there must have been many *screens*.

(Chapter 13 Lesson 10: Idiom Errors)

(Chapter 13 Lesson 12: Other Problems with Modifiers)

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39. **E** Choice (A) undermines the purpose of the essay by suggesting that its topic is irrelevant, and so is a very poor ending. Choice (B) does not provide a concluding thought, but rather an incidental comment that is only tangentially related to the rest of the essay. Choice (C) likewise introduces a thought begging to be developed, rather than a conclusive and *hopeful* note as the question requires. Choice (D) seems to provide a conclusive thought with an air of hope, but it is not appropriate to the final paragraph, which discusses the *controversy* behind Hockney's theory. Choice (E) fits logically into such a discussion and also provides a hopeful concluding thought.

(Chapter 13 Lesson 15: Coordinating Ideas)