



**JOHN  
BAYLOR  
PREP**

*Test Preparation*



*The Best Paying Job a High School Student Could Have*

**ACT<sup>®</sup> PRACTICE**

**TEST 1459C**

*JBP: Helping schools and families create  
college graduates with minimal debt*

**JohnBaylorPrep.com**



@JB\_Prep

©2016 JohnBaylorPrep.com



ENGLISH TEST

45 Minutes—75 Questions

**DIRECTIONS:** Certain parts of the following five passages have been underlined. In some cases the underlined portion is a word or a phrase; in others it is an entire sentence or parts of two sentences. Each underlined portion is numbered. To the right of the passage you will see numbers which correspond to the underlined portions of the passages. Choose the answer that best expresses the idea, makes the statement correct in Standard English, or is worded in such a way as to convey the tone and style of the passage. If you think the original version of the underlined portion is best, choose “NO CHANGE.”

There are also questions which ask about a section of the passage or the entire passage. These questions don’t refer to any underlined portions of the passage, but rather refer to numbers in a box within the passage. For each question, choose the alternative you consider best and fill in the corresponding letter on your answer sheet. Read the entire passage before you begin answering the questions. In some cases, questions require you to read the lines before and after the portion of the passage being questioned. Be sure you have understood the entire section of the passage before answering the question.

Passage I

The following paragraphs may or may not be in the most logical order. Each paragraph is numbered in brackets, and Question 15 will ask you to choose where Paragraph 5 should most logically be placed.

Standing Bear

[1]

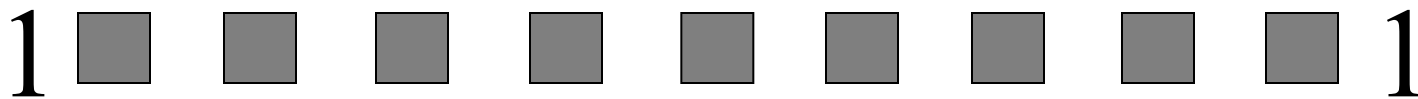
In the mid to late-1800s, Standing Bear was chief of the Ponca Indians, who’s lands were located in Nebraska near the Niobrara branch of the Missouri River. Over the decades, the Ponca had lost a great deal of their land to their enemies; the Sioux, and to white settlers moving into the region. Still, the Ponca generally welcomed settlers.

[2]

In 1877, the U.S. Government pressured Standing Bear to give up what Ponca land remained and to move to Indian Territory (present day Oklahoma). 4

Edward Kemble, Indian Inspector from Washington, D.C., took Standing Bear and nine Ponca delegates to see their new

1. A. NO CHANGE  
B. whose lands were located  
C. whose lands’ were located  
D. whom resided on land located
2. Which of the following alternatives to the underlined portion would NOT be acceptable?  
F. the Ponca lost a great deal of their land  
G. much Ponca land was lost  
H. the Ponca, having lost much of their land  
J. a majority of Ponca land was lost
3. A. NO CHANGE  
B. the Sioux and to white settlers  
C. the Sioux, and the white settlers  
D. the Sioux and the white settlers
4. At this point, the writer is considering adding the following true statement:  
Standing Bear grudgingly agreed when a poor translation led him to believe that he could return to Nebraska if he did not like the new land. Should the writer add this sentence here?  
F. Yes, because it shows the power that Standing Bear had over the government.  
G. Yes, because it is necessary to understanding the essay as a whole.  
H. No, because it includes information that is already included in the essay.  
J. No, because it would distract readers from the main topic of the essay.



home. Standing Bear saw the barren desert, and he told Kemble  
through a translator that he would not leave his people there to  
die. Kemble, enraged, left the 10 Ponca to walk the 500 miles  
home to Nebraska.

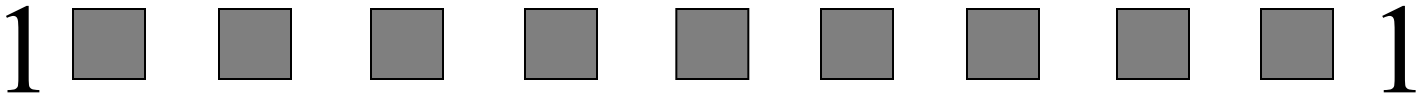
[3]

After arriving back in Nebraska two months later, the  
delegation of leaders representing the Ponca people were  
arrested. All of the leaders were subsequently moved—by  
force!—to Oklahoma. The government also provided no real  
provisions and did not provide shelter, so Standing Bear's  
twelve-year-old son died, also one-third of the Ponca. Although,  
Standing Bear and many of his men took the boy to Nebraska to  
be buried, his son's dying wish.

[4]

Standing Bear eloquently argued, "I am a man." Judge  
Dundy agreed. He further ruled that the Ponca's civil rights had  
been violated. 11

5. Which of the following alternatives to the underlined portion would NOT be acceptable?  
A. NO CHANGE  
B. desert; he  
C. desert, he  
D. desert. He
6. F. NO CHANGE  
G. Kemble enraged  
H. Kemble, enraged  
J. Kemble enraged,
7. A. NO CHANGE  
B. being  
C. are  
D. was
8. F. NO CHANGE  
G. moved to Oklahoma. By force!  
H. moved forcibly to Oklahoma.  
J. moved voluntarily to Oklahoma.
9. Which choice provides the most logical arrangement of the parts of this sentence?  
A. NO CHANGE  
B. provided no real provisions or shelter, and nearly one-third of the Ponca died, including Standing Bear's twelve-year-old son.  
C. providing no real provisions or shelter, had caused death to nearly one-third of the Ponca and also Standing Bear's twelve-year-old son.  
D. provided no real provisions or shelter and one-third of the Ponca died, including Standing Bear's twelve-year-old son.
10. F. NO CHANGE  
G. Besides,  
H. Regardless,  
J. DELETE the underlined portion.
11. The author is considering inserting the following sentence:  
The Ponca tribe has lent its proud name to a small town in northeast Nebraska.  
Should this sentence be added at this point in the essay?  
A. Yes, current Nebraska geography is important to the story.  
B. Yes, this information adds to the distinguished history of the Ponca.  
C. No, this information digresses from the main point of the essay.  
D. No, Ponca, Nebraska, has a population of less than 1,100.



[5]

Once in Nebraska, Standing Bear was arrested by General Crook’s men for leaving it. Crook, however, was appalled when he learned how the Ponca had been treated and their people mistreated. He contacted the Omaha Herald, and soon newspapers across the country ran the story. Two attorneys agreed to represent Standing Bear for free in Federal Court and filed a lawsuit against General Crook, the Army’s representative, claiming that Indians were persons under the law and that their civil rights had been violated under the 14<sup>th</sup> amendment.

- 12. **F.** NO CHANGE
  - G.** Nebraska.
  - H.** there.
  - J.** Indian Territory.
- 13. **A.** NO CHANGE
  - B.** and their people handled.
  - C.** and their case mismanaged.
  - D.** DELETE the underlined portion.

[6]

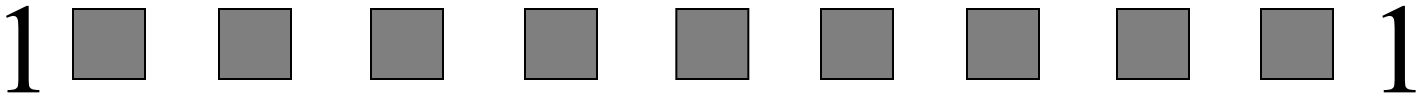
Eventually, the Ponca were allowed to return to Nebraska. Standing Bear would turn out to be a great leader for the Ponca.

- 14. Given that all the choices are true, which one most effectively concludes and summarizes this essay?
  - F.** NO CHANGE
  - G.** A man of passion and intelligence, Standing Bear would use the U.S. Constitution to fight for Indians everywhere.
  - H.** Standing Bear grieved a long time for his son, though his people were able to comfort him in his later years.
  - J.** Standing Bear, the man who changed the lives of Indians everywhere, died in 1908 and is buried in the homeland he fought so hard to retain.

15

**Question 15 asks about the preceding passage as a whole.**

- 15. For the sake of the logic and coherence of this essay, Paragraph 5 should be placed:
  - A.** where it is now.
  - B.** after Paragraph 1.
  - C.** after Paragraph 2.
  - D.** after Paragraph 3.



Passage II

America's Entryway: Ellis Island

Ellis Island opened it's doors in 1892. The first person to  
 16  
 pass through Ellis Island, 15-year-old Annie Moor of Ireland,  
 received a \$10 gold coin as a prize. She was the first  
 immigrant to grace a line that would eventually number  
 twelve million immigrants in number. Fully one-third to  
 17  
 one-half of Americans can trace their ancestry to someone  
 who passed through Ellis Island. 18

When immigrants came, they arrived by ship. The major  
 classes in which to travel were: first, second, or steerage.  
 19  
 Those in first or second class were briefly questioned by  
 inspectors on board and bypassed Ellis Island altogether.  
 Those in steerage however, were too numerous to question  
 20

on board and were forced to endure the lines, where, they  
 21  
were questioned by inspectors and examined by doctors.  
 21

[1] The six-second medical exams became well-known  
 on the island. [2] Doctors developed a series of codes which  
 they would mark on the back of an immigrant's clothing in

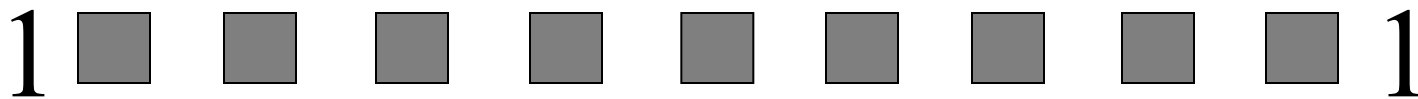
- 16. F. NO CHANGE  
 G. its  
 H. its'  
 J. their
- 17. A. NO CHANGE  
 B. immigrants long  
 C. immigrants in quantity  
 D. DELETE the underlined portion
- 18. The writer is considering deleting the preceding sentence. Should this sentence be kept or deleted?  
 F. Kept, because the reader must know this statistic to understand the essay.  
 G. Kept, because it helps the reader comprehend the extent of Ellis Island's impact on America.  
 H. Deleted, because it is not relevant to the preceding sentence.  
 J. Deleted, because it is unnecessarily wordy.
- 19. A. NO CHANGE  
 B. travel were,  
 C. travel were  
 D. travel were;
- 20. F. NO CHANGE  
 G. steerage, however, were  
 H. steerage, however, was  
 J. steerage, however were
- 21. A. NO CHANGE  
 B. lines; where they were questioned by inspectors,  
 C. lines, where they were questioned by inspectors,  
 D. lines, where they were questioned by inspectors

chalk. [3] Any defect meant certain deportation. [4] Besides  
22  
 many immigrants found ways to remove the chalk markings  
 or turned their clothes inside-out to avoid detection. [5] In all,  
 a mere 250,000 people were sent back to their homelands  
 because of disease or other problems. [6] The ill stayed in the  
23  
 725 hospital beds while their families stayed in three-tiered  
24  
 bunk beds in row-houses on the island. [7] Meals were  
 provided in a giant hall that sat one thousand people at a time.  
 [8] Sometimes, as many as four thousand people slept at Ellis  
 Island in a single night. 25

If immigrants passed the medical exam and the  
 inspector’s questions (which included questions about work  
 skills, literacy in one’s own language, and whether one had  
 relatives with whom one could stay), the entire time on Ellis  
26  
 Island took about five hours. If an immigrant were granted  
 leave to come to America, he or she would walk down the  
 “Staircase of Separation” and received a “landing card.” They  
27  
 would then exchange their money for their ultimate  
 destination and purchase their train tickets.  
28

In 1924, the U.S. greatly restricted the number of  
 immigrants allowed to enter the country. Ellis Island  
 eventually became a detention port for German POWs  
 during World Wars I and II and closed in 1954. It reopened as  
 a museum in 1990. The number of total immigrants, families,  
 and children tell only a small part of the story. To those  
29  
 Americans who trace their citizenship to Ellis Island, the  
 colloquial name of that square mile of land remains poignant.  
 It was and still is known as the “Island of Hope.” 30

- 22. F. NO CHANGE  
 G. For example,  
 H. That is why  
 J. Also,
- 23. Which of the following offers the most specific detail while  
 maintaining the style and tone of the essay?  
 A. NO CHANGE  
 B. the inability to work.  
 C. health.  
 D. difficult troubles.
- 24. F. NO CHANGE  
 G. his or her family’s  
 H. his or her family  
 J. their families’
- 25. If the writer were to divide the preceding paragraph into  
 two shorter paragraphs in order to differentiate between the  
 medical exams themselves and the housing provided, the  
 new paragraph should begin with sentence:  
 A. 3  
 B. 4  
 C. 5  
 D. 6
- 26. F. NO CHANGE  
 G. with who  
 H. with which  
 J. DELETE the underlined portion.
- 27. A. NO CHANGE  
 B. receives  
 C. receive  
 D. did receive
- 28. The best placement for the underlined portion would be:  
 F. where it is now.  
 G. after the word *money*.  
 H. after the word *then*.  
 J. after the word *exchange*.
- 29. A. NO CHANGE  
 B. tells  
 C. have told  
 D. will tell
- 30. If the writer were to delete this final paragraph from the  
 essay, which of the following would be lost?  
 F. A detailed description of the final moments of an  
 immigrant’s journey.  
 G. A comment on the importance of Ellis Island to late  
 20<sup>th</sup> century American life.  
 H. A brief history of Ellis Island through the remainder of  
 the 20<sup>th</sup> century.  
 J. A plea to the reader to visit the Ellis Island museum.



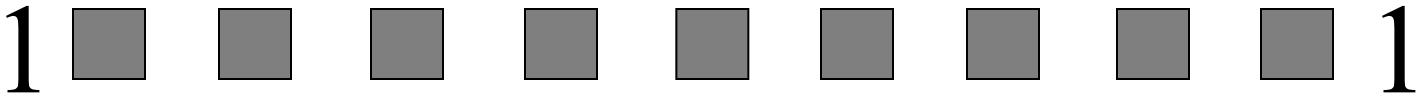
Passage III

A Scrapbook of Stories

I was looking through my scrapbook the other day and flipped to a photograph of my sister, brother, and I sitting next to my Grandmother at my seventh birthday party. I was wearing my favorite pink dress, and Grandma Smith was in her standard maroon suit. 32 There is an age gap of about sixty years between

her and I, and I stand about ten inches taller than her, but we have almost always had a close relationship. Though I have two grandmothers, of course, I have always felt closest to Grandma Smith.

31. A. NO CHANGE  
B. I –  
C. I,  
D. me
32. The writer is considering adding the following sentence here:  
She was then sixty-seven years old.  
Given that this is true, would this sentence be a relevant and appropriate addition?  
F. Yes, because it explains the succeeding sentence.  
G. Yes, because it explains why the writer respects her grandmother.  
H. No, because it has little to do with the surrounding sentences.  
J. No, because the next sentence would then be redundant.
33. A. NO CHANGE  
B. she and me,  
C. her and me,  
D. she and I,
34. F. NO CHANGE  
G. she, but  
H. she and  
J. her;
35. A. NO CHANGE  
B. closer  
C. the closest  
D. the closer



I would know very little about Grandma Smith if it weren't  
for her stories. When I was a young child of only eight years,  
36

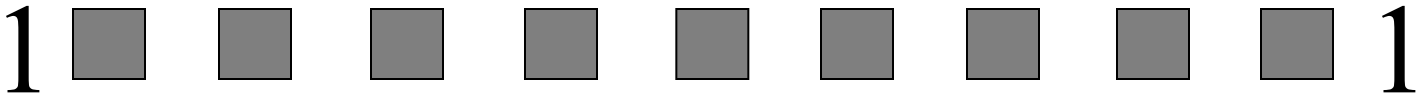
she often sat me on her knee and told me about her childhood  
during the Great Depression, or her first job as a schoolteacher, or  
37  
her challenges raising a family during World War II. I was  
37  
drawn in by these visions of the past – as though she were turning  
the pages of her own storybook, allowing me to look at the  
pictures.

As I grew older, I became too impatient to listen and  
38  
too obsessed with my own present to pay attention to someone  
38  
else's past. This stage of self-obsession was interrupted by the  
38

news that my grandmother was in the hospital: she had broken  
39  
her hip.  
39

36. F. NO CHANGE  
G. As I was a young child, only eight years old,  
H. When I was eight years old, a young child,  
J. When I was eight years old,
37. If the writer were to delete the underlined portion, the essay would primarily lose:  
A. unnecessary and repetitive details.  
B. examples that establish all the significant events in her grandmother's memory.  
C. reasons to listen to our elders.  
D. notable details that reveal some of the subject matter of her grandmother's stories.
38. Which of the following is LEAST acceptable?  
F. NO CHANGE  
G. I grew older and became too impatient to listen and too obsessed with my own present to pay attention to someone else's past.  
H. Too obsessed with my own present to pay attention to someone else's past, I grew older and became too impatient to listen.  
J. Increasingly, as I grew older, I became too impatient to listen and too obsessed with my own present to pay attention to someone else's past.
39. Which of the following alternatives to the underlined portion would NOT be acceptable?  
A. NO CHANGE  
B. hospital and her hip had been broken.  
C. hospital; her hip had been broken.  
D. hospital because she had broken her hip.





She came to live with us during her recovery; I kept her company. Those hours of conversation revived our friendship. I remember the story that brought us together again. I was sitting in a chair next to her bed when she told me about the hot, humid summers of her childhood. We understood each other again despite the disparity in age and experience.

40

41

42

My grandmother has now been gone for years, while I still hear her stories. Her tales of childhood continues to echo in my head, and the memory of her voice is one that cannot be preserved in a scrapbook.

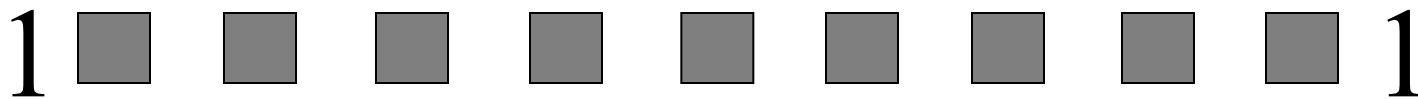
43

44

40. Which of the following alternatives to the underlined portion best clarifies the beneficial nature of the hours of conversation?
- F. NO CHANGE
  - G. maintained
  - H. altered
  - J. stabilized
41. A. NO CHANGE  
B. the hot, humid  
C. the hot humid,  
D. the, hot humid
42. The writer is considering changing the previous sentence to: We understood each other again – a friendship no scrapbook can fully illustrate. Should the writer make this addition here?
- F. No, because the information is irrelevant to the paragraph’s focus.
  - G. No, because the same sentiment is presented in the following paragraph’s concluding sentence.
  - H. Yes, because the addition helps draw parallels between this paragraph and the concluding paragraph.
  - J. Yes, because the addition provides rich detail and necessary information.
43. A. NO CHANGE  
B. and,  
C. and even now  
D. however
44. F. NO CHANGE  
G. of childhood continue  
H. of days gone by continues  
J. of all those yesterdays gone by continue

Question 45 asks about the preceding passage as a whole.

45. Suppose the writer had intended to write an essay revealing in-depth knowledge of a particular historical era. Would this essay accomplish the writer’s goal?
- A. Yes, because the essay indicates that the writer has inherited knowledge about the past through her grandmother’s stories.
  - B. Yes, because the essay explains the writer’s relationship with her grandmother, who grew up during the Great Depression.
  - C. No, because although the essay mentions several important historical eras, it does not focus or elaborate on them.
  - D. No, because the writer has little knowledge of history, despite her relationship with her grandmother.



Passage IV

**Texting and Teen Addiction**

During the last thirty years, one wave of technological innovation after another has broken onto the global scene.

Each of these waves occur more frequently than ever; the  
46 47

evolution of the cell phone and of the internet-delivered movie shows how the pace of change continues to hasten.  
48

Educators and psychologists for example are becoming  
49  
concerned about the 600% increase in cell phone SMS, or “texting,” among teenagers.

In 2009, The Pew *Internet and American Life* Project found that one in three teenagers send more than one hundred  
50

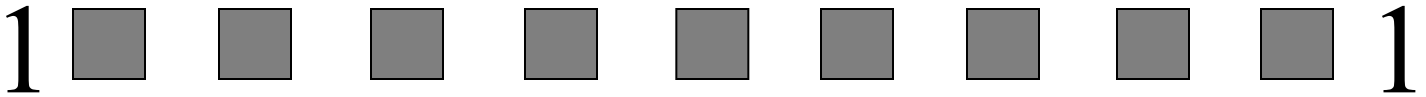
text messages a day, in most cases responding immediately to  
51  
texts. The poll also reports that 54% of teens texted daily

during 2009. Girls between fourteen and seventeen years of age comprise the largest segment of the teenage texting  
52

population. In 2009, this age group of girls average more  
53

than 100 messages a day. Among teens, texting is more than  
54  
all other forms of communication, including face-to-face interaction, calling by phone, and instant messaging.

46. F. NO CHANGE  
G. occurs  
H. are occurring  
J. have occurred
47. Which choice would NOT be acceptable?  
A. NO CHANGE  
B. ever. The  
C. ever and the  
D. ever: the
48. F. NO CHANGE  
G. have shown  
H. are showing  
J. show
49. A. NO CHANGE  
B. psychologists for example  
C. psychologists, for example  
D. psychologists, for example,
50. F. NO CHANGE  
G. sends  
H. are sending  
J. have sent
51. Which of the following alternatives to the underlined portion would NOT be acceptable?  
A. often  
B. hypothetically  
C. typically  
D. usually
52. F. NO CHANGE  
G. comprises  
H. mirror  
J. mirrors
53. A. NO CHANGE  
B. are averaging  
C. were averaging  
D. averaged
54. The writer would like to suggest how much texting has taken control of teenagers’ time. Which one best accomplishes the writer’s goal?  
F. NO CHANGE  
G. has become higher than  
H. far surpasses  
J. is greater than



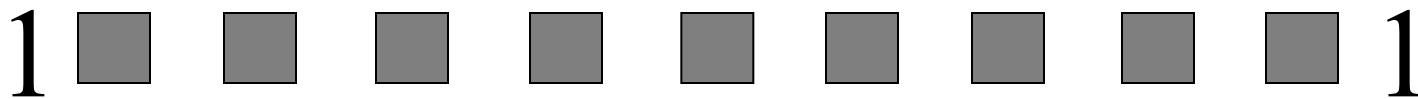
What is especially concerning to educators is that the study reported that 64% of teens texted while in class. Students who are texting during class are distracted from their work.  
55 56

Furthermore, texting is a threat to academic integrity as it creates a new avenue for cheating. Texting has become so pervasive that Dr. Seyffert of Seton Hall University has found that one in five teens routinely interrupts his or her sleep to text. Cases of cyber-bullying within the teenage population has also become prevalent.  
57

Has texting become a new addiction for teens, or is it merely a passing obsession? Dr. Seyffert notes that neuro-imaging studies on texting teens show that the same areas of the brain light up as when a drug addict uses drugs. This explains why many teens report anxiety when he or she has been unable to text. Some argue, though, that the obsession will pass as the novelty wears off and the behavior normalizes into everyday life.  
58

At present, texting raises concerns, especially when teens text in class, lose sleep, or text while driving. Although these behaviors can be brought under control, texting can become a fun diversion rather than a psychological need. 60

55. A. NO CHANGE  
B. whom are  
C. whom were  
D. which are
56. F. NO CHANGE  
G. by their phones.  
H. with their gadget.  
J. DELETE the underlined portion.
57. A. NO CHANGE  
B. have also become  
C. has also become  
D. have also became
58. F. NO CHANGE  
G. he or she are  
H. he or she is  
J. DELETE the underlined portion.
59. A. NO CHANGE  
B. While  
C. As long as  
D. Most likely,
60. Which of the following best summarizes the purpose of the passage?  
F. Texting is an addiction that needs to be treated.  
G. Texting may seem harmless, but its growing use, especially among teens, can be harmful.  
H. Texting in America has become more prevalent than any experts initially predicted.  
J. Texting is a positive, healthy technological advancement.



Passage V

William Jennings Bryan

[1]

On March 19, 1860, William Jennings Bryan was born in

Salem, Illinois. During Bryans adolescence, William

61

developed a sturdy belief in the goodness and potential of all

people. Nevertheless, he became known as a beacon to the

62

common person, gaining the title “The Great Commoner.”

[2]

As a young man, Bryan’s education was completed at the

63

Illinois College and then the Northwestern University School

63

of Law. There he met Mary Elizabeth Baird, a fellow law

63

student. They married in 1884. Early on in his career as a

lawyer and politician, Bryan found he had a tremendous talent

for giving speeches during which he would espouse the

64

democratic ideals of free coinage of silver, trust-busting, and

railroad regulation. His outstanding oratorical skills included:

65

a dramatic speaking style, the ability to speak without notes,

and a booming voice that could be easily heard without

66

amplification.

[3]

(1) Bryan ran for president of the United States three

times in his political career: in 1896, 1900, and 1908. (2) The

67

Republicans, however, portrayed him as a danger to the solid

currency of the economy gold. (3) Each time, his platform of

68

free coinage of silver, anti-imperialism, and other populist

principles made him wildly popular with the struggling

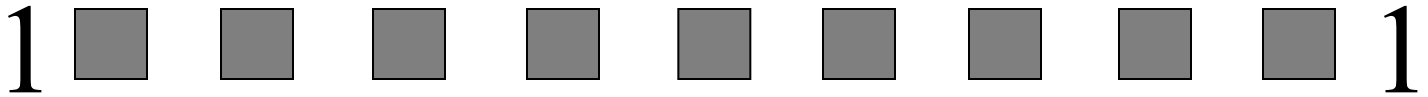
farmers in the West and South. (4) Consequently, he lost all

three campaigns for president as the Midwestern middle class

and Northeastern elite voted against him.

69

- 61. A. NO CHANGE  
B. During Bryans’ adolescence  
C. For Bryan’s adolescence  
D. During childhood
- 62. F. NO CHANGE  
G. However,  
H. Ultimately,  
J. Yet,
- 63. A. NO CHANGE  
B. the schools he attended were Illinois College and then the Northwestern University School of Law.  
C. Bryan attended the Illinois College and then the Northwestern University School of Law.  
D. his education was completed at the Illinois College and then the Northwestern University School of Law.
- 64. Which of the following alternatives to the underlined portion would NOT be acceptable?  
F. speeches;  
G. speeches—  
H. speeches in which  
J. speeches, where
- 65. A. NO CHANGE  
B. included  
C. includes  
D. includes:
- 66. Which placement of the underlined word would be LEAST acceptable?  
F. where it is now  
G. after the word *that*  
H. after the word *heard*  
J. after the word *voice*
- 67. A. NO CHANGE  
B. in his life  
C. which is unusual  
D. DELETE the underlined portion
- 68. F. NO CHANGE  
G. economy—gold.  
H. economy; gold.  
J. economy, being gold.
- 69. Which of the following is the best order for the sentences in Paragraph 3?  
A. 1, 2, 3, 4  
B. 1, 3, 2, 4  
C. 2, 4, 3, 1  
D. 4, 2, 3, 1



[3]

While upset by the losses, Bryan remained a larger-than-life figure in American politics. 70 In Wisconsin, he

once made twelve speeches in fifteen hours. However, he

71

would speak at events for up to six hours at a time. The fame eventually brought him to the attention of President Woodrow Wilson, who appointed Bryan Secretary of State in 1913.

However, Bryan left in 1915 because of what he perceived to be Wilson's aggressive views on World War I and imperialist policies in the Philippines.

Bryan would fight for his moral and religious ideals during Prohibition and as a part of the Progressive Movement, but he is probably best known for his role in the Scopes Monkey Trial. Bryan led the prosecution against John W. Scopes, a high school teacher accused of teaching evolution. Bryan was religiously opposed to the Theory of Evolution because he believed it to be based on laws of cruelty and indifference rather than on love. He won the trial but died in his sleep five days later on July 26<sup>th</sup>, 1925.

74

70. Upon reviewing the essay, the writer has decided that a sentence is needed at this point that will provide a logical and effective connection between the sentence that would precede it and the sentence that would follow it. Which of the following sentences would best accomplish this objective?
- F. The 1900 election took a particular toll on Bryan and he felt that the party had betrayed him by becoming more moderate.
  - G. He would eventually reenter the national stage, but that was still to come.
  - H. He remained very popular for the fiery speeches that he continued to make across the country.
  - J. His religious ideals continued to influence his political outlook, prompting him to make more attempts to become president.

71. A. NO CHANGE  
 B. In those times  
 C. Consequently  
 D. DELETE the underlined portion and the comma, capitalizing 'He.'

72. F. NO CHANGE  
 G. That  
 H. Bryan's  
 J. Wilson's

73. Given that all of the choices are true, which one provides the most specific detail and maintains the style and tone of the essay?
- A. NO CHANGE
  - B. walked out
  - C. resigned in protest
  - D. eventually went away

74. F. NO CHANGE  
 G. for love.  
 H. about love.  
 J. in love.

Question 75 asks about the passage as a whole.

75. Which of the following titles best captures the essence of the essay?
- A. William Jennings Bryan: One of America's Orators
  - B. William Jennings Bryan: Towering Champion of the Common Man
  - C. William Jennings Bryan: Man of the Rockies
  - D. William Jennings Bryan: Those Who Are Quiet Are Rarely Heard.

**END OF TEST 1**  
**STOP! DO NOT TURN THE PAGE**  
**UNTIL TOLD TO DO SO.**  
**DO NOT RETURN TO THE PREVIOUS TEST.**

**MATHEMATICS TEST**

60 MINUTES—60 QUESTIONS

**DIRECTIONS:** Solve each problem, choose the correct answer, and then fill in the corresponding oval on your answer document.

Do not linger over problems that take too much time. Solve as many as you can; then return to the others in the time you have left for this test.

You are permitted to use a calculator on this test. You may use your calculator for any problems you choose,

but some of the problems may best be done without using a calculator.

Note: Unless otherwise stated, all of the following should be assumed.

1. Illustrative figures are NOT necessarily drawn to scale.
2. Geometric figures lie in a plane.
3. The word *line* indicates a straight line.
4. The word *average* indicates arithmetic mean.

**DO YOUR FIGURING HERE.**

1. If  $3x + 10 = 22$ , what is the value of  $x$ ?
  - A. 4
  - B. 8
  - C. 16
  - D. 22
  - E. 30
  
2. If a set of numbers  $\{1, 1, 3, 4, 5\}$  adds the number 6 to its group, what is the median of the new set of numbers?
  - F. 1
  - G. 2
  - H. 3
  - J. 3.5
  - K. 4
  
3. If it takes 12 hours to drive from New York to Charlotte driving a constant speed, how much of the trip is remaining after 3 hours?
  - A.  $\frac{1}{4}$
  - B.  $\frac{1}{3}$
  - C.  $\frac{2}{3}$
  - D.  $\frac{3}{4}$
  - E.  $\frac{4}{5}$
  
4. If  $y^2 = x^4$  and  $x = 3$ , what is a value of  $y$ ?
  - F. 3
  - G. 6
  - H. 9
  - J. 36
  - K. 81



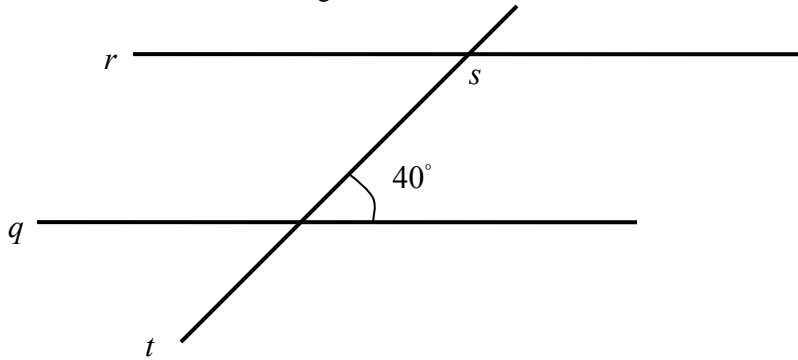
DO YOUR FIGURING HERE.

5. If  $\log_x 125 = 3$ , what is the value of  $x$ ?
- A. 1  
B. 3  
C. 5  
D. 25  
E. 125
6. Which of the following lists the fractions  $\frac{1}{2}$ ,  $\frac{2}{3}$ ,  $\frac{2}{9}$ ,  $\frac{1}{4}$ , and  $\frac{3}{5}$  in order from greatest to least?
- F.  $\frac{2}{9}$ ,  $\frac{1}{2}$ ,  $\frac{3}{5}$ ,  $\frac{1}{4}$ ,  $\frac{2}{3}$   
G.  $\frac{2}{3}$ ,  $\frac{3}{5}$ ,  $\frac{1}{2}$ ,  $\frac{2}{9}$ ,  $\frac{1}{4}$   
H.  $\frac{2}{3}$ ,  $\frac{3}{5}$ ,  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{2}{9}$   
J.  $\frac{1}{2}$ ,  $\frac{3}{5}$ ,  $\frac{2}{9}$ ,  $\frac{1}{4}$ ,  $\frac{2}{3}$   
K.  $\frac{1}{4}$ ,  $\frac{2}{9}$ ,  $\frac{1}{2}$ ,  $\frac{3}{5}$ ,  $\frac{2}{3}$
7. Jason ate lunch at Virginia's Diner. If his meal cost him \$11.00, and he wants to leave Virginia a 15% tip, how much money should Jason leave for the total bill?
- A. \$11.50  
B. \$12.00  
C. \$12.36  
D. \$12.50  
E. \$12.65
8. The lengths of the sides of a triangle are 3, 5, and 7 inches. How many inches long is the shortest side of a similar triangle that has a perimeter of 75 inches?
- F. 10  
G. 12  
H. 14  
J. 15  
K. 22



DO YOUR FIGURING HERE.

9. Lines  $q$  and  $r$  are parallel lines that are intersected by line  $t$ . What is the measure of angle  $s$ ?



- A.  $40^\circ$   
 B.  $60^\circ$   
 C.  $100^\circ$   
 D.  $120^\circ$   
 E.  $140^\circ$
10. The diagonal of a rectangular yard is 100 feet. One side is 28 feet. What is the perimeter of the yard in feet?  
 F. 56  
 G. 152  
 H. 156  
 J. 248  
 K. 256
11. Mark, Sophia, and Len are waiting in line to buy tickets to a football game. If they are standing in this order, and there are 11 people ahead of Mark and there are twice as many people behind Len as there are ahead of Mark, how many people are in the line for tickets?  
 A. 11  
 B. 22  
 C. 25  
 D. 35  
 E. 36
12. If  $|2x-4| < 8$ , then what is the value of  $x$ ?  
 F.  $x < 6$   
 G.  $-2 < x < 6$   
 H.  $-2 < x$   
 J.  $x > 0$   
 K.  $-2 < x < 4$





DO YOUR FIGURING HERE.

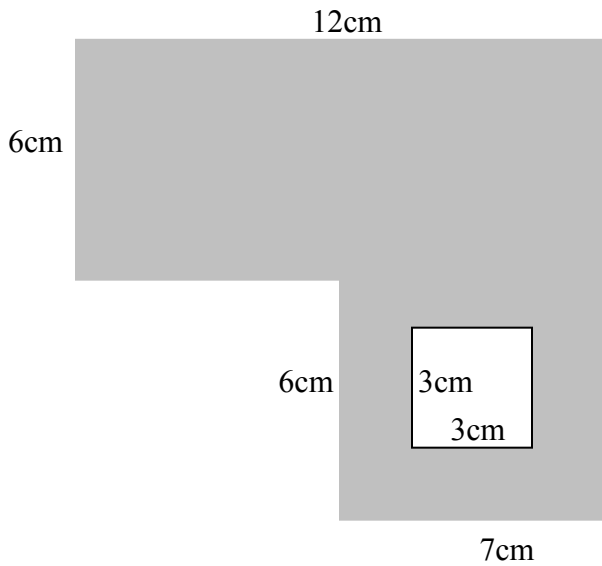
13. If 40 is 20% of  $x$ , then  $x = ?$ 

- A. 80
- B. 100
- C. 160
- D. 200
- E. 400

14. If Cassie's first three test scores are 80, 90, and 91, what is the lowest score she can get on the fourth test and still average at least an 85?

- F. 77
- G. 79
- H. 85
- J. 86
- K. 87

15. In the figure below, what is the area of the shaded region in square centimeters?



- A. 56
- B. 63
- C. 72
- D. 105
- E. 114

16. If  $a = 3$  and  $b = -1$ , then what is the solution of  $ab - ab^2$ ?

- F. -12
- G. -6
- H. -2
- J. 0
- K. 3



17. The product of  $(3x^2z)(2xz^4)$  is equivalent to:

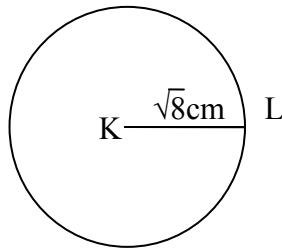
- A.  $6x^2z^4$
- B.  $5x^2z^4$
- C.  $6x^3z^5$
- D.  $5x^3z^5$
- E.  $5xz^3$

**DO YOUR FIGURING HERE.**

18. Sally is going on a trip to Oklahoma. When she arrives at the Tulsa airport, she is able to choose between two different rental car companies. Company A charges a fee of \$100 and an additional \$25 for each day that she has the rental car. Company B charges a fee of \$80 plus \$27 dollars for each day she has the car. On which day does Company B become more expensive than Company A?

- F. The 6th
- G. The 8th
- H. The 9th
- J. The 10th
- K. The 11th

19. KL, a radius of the circle below, measures  $\sqrt{8}$  centimeters. What is the perimeter of the circle in centimeters?



- A.  $4\pi\sqrt{2}$
- B.  $4\pi\sqrt{8}$
- C.  $4\pi$
- D.  $8\pi$
- E.  $16\pi$

20. Which of the following is NOT a factor of  $x^4 - 81$ ?

- F.  $x^2 + 9$
- G.  $x^2 - 3$
- H.  $x^2 - 9$
- J.  $x + 3$
- K.  $x - 3$



21. What is the midpoint of the line segment with endpoints of (2, 6) and (-3, 12)?
- A. (-1, 8)
  - B. (-5, 18)
  - C. (-0.5, 9)
  - D. (1, 9)
  - E. (0.5, 9)

**DO YOUR FIGURING HERE.**

22. Joe wants to buy a new car, but he doesn't know what color to choose. He decides that he is going to choose at random. On the car lot, there are 12 black cars and 5 red cars. There are twice as many white cars as black cars and red cars combined. There are half as many green cars as white cars. And there are three times as many blue cars as red cars. What is the probability that Joe will choose a blue car?
- F.  $\frac{25}{83}$
  - G.  $\frac{83}{15}$
  - H.  $\frac{17}{65}$
  - J.  $\frac{15}{65}$
  - K.  $\frac{15}{83}$

23. In order to increase the mean of 6 numbers by 3, what would the total sum of the increase be?
- A. 3
  - B. 9
  - C. 12
  - D. 16
  - E. 18



DO YOUR FIGURING HERE.

Use the following information to answer questions 24-25.
---

Below is a chart that shows Garden City's temperatures in fahrenheit at each hour during the night:

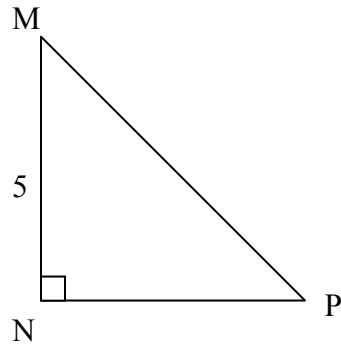
10 pm	11 pm	12 am	1 am	2 am	3 am	4 am	5 am	6 am
34°	17°	?	4.25°	4.25°	4.25°	14.25°	24.25°	34.25°

24. If prior to 2 am the temperature dropped at a similar rate throughout, what was the temperature at 12 am ?
- F. 8.5°
  - G. 12.75°
  - H. 17°
  - J. 34°
  - K. 40°
25. Assuming the temperature at 12am was about 10° Fahrenheit, what was the approximate mean temperature during the night?
- A. -4°
  - B. 4°
  - C. 16°
  - D. 22°
  - E. 34°



DO YOUR FIGURING HERE.

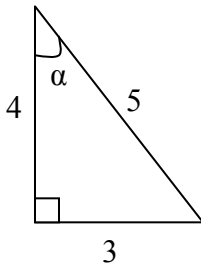
26. In the isosceles right triangle below,  $MN = 5$  mm.  
What is the length of line  $MP$  in millimeters?



- F.  $5$   
 G.  $\sqrt{10}$   
 H.  $5\sqrt{2}$   
 J.  $5\sqrt{10}$   
 K.  $25$
27. Which of the following has the lowest product?  
 A.  $1 \cdot \frac{1}{3}$   
 B.  $\frac{9}{2} \cdot \frac{1}{9}$   
 C.  $\frac{1}{2} \cdot \frac{1}{4}$   
 D.  $\frac{1}{2} \cdot \frac{1}{6}$   
 E.  $1 \cdot \frac{1}{6}$
28. What is the value of  $x^3 - 2x^2 + x - 9$ , when  $x = -2$ ?  
 F.  $-27$   
 G.  $-18$   
 H.  $-11$   
 J.  $9$   
 K.  $13$



DO YOUR FIGURING HERE.

29. What is the value of  $\csc \alpha$ ?

- A.  $\frac{3}{5}$   
 B.  $\frac{3}{4}$   
 C.  $\frac{4}{5}$   
 D.  $\frac{5}{3}$   
 E.  $\frac{4}{3}$
30. A dog eats 6 cans of dog food in 5 days. How many cans of dog food does he eat in  $5+x$  days?  
 F.  $6 + \frac{6x}{5}$   
 G.  $\frac{6 + 6x}{5}$   
 H.  $\frac{6 + x}{5}$   
 J.  $6x$   
 K.  $5x$
31. Line  $s$  passes through points  $w$  (2, 4) and  $z$  (-6, -10).  
 What is the slope of line  $s$ ?  
 A.  $-\frac{8}{14}$   
 B.  $\frac{4}{7}$   
 C. 3  
 D.  $\frac{14}{9}$   
 E.  $\frac{7}{4}$
32. If  $4^y = 64^{13}$ , what is the value of  $y$ ?  
 F.  $\frac{y+4}{13}$   
 G. 13  
 H. 16  
 J. 39  
 K. Cannot be determined from the given information.



DO YOUR FIGURING HERE.

33. If a number is divisible by both 3 and 12, then that number must be divisible by which of the following?
- A. 5
  - B. 6
  - C. 18
  - D. 36
  - E. 48
34. If  $f(x) = 2x^2 + 6$ , what is the value of  $f(3)$ ?
- F. 12
  - G. 18
  - H. 24
  - J. 30
  - K. 36
35. Maria wants to put on a piano concert for her 12-year-old daughter to showcase her daughter's talent. Maria will charge adults \$5 and children \$2 for admission. She has agreed to give each of her daughter's young friends a 25% discount. If  $a$  stands for the number of adults,  $c$  for the number of children, and  $f$  for the number of friends, which of the following is an equation that shows how much money Maria will make?
- A.  $5a + 2c + f(2 \cdot 0.75)$
  - B.  $5a - 2c + 2(f + 0.25)$
  - C.  $5a + 2c + (f \cdot 0.25)$
  - D.  $5a + 2c + 2(f / 0.25)$
  - E.  $5a + 2c + 2f$
36. Julio is building a fence around his rectangular garden to keep rabbits out. His garden extends right up to the back of his house. If his garden begins 10 feet from his house and covers 7 feet across the back of his house, what is the minimum length of fencing Julio will need to protect his garden?
- F. 17 ft
  - G. 24 ft
  - H. 27 ft
  - J. 34 ft
  - K. 70 ft
37. In an  $(x, y)$  coordinate plane, what is the slope of  $3 - 2y = -4 - 2x$ ?
- A. -4
  - B. -2
  - C.  $\frac{1}{2}$
  - D. 1
  - E. 2



38. What is the equation of the circle in the standard  $(x, y)$  coordinate plane that has a radius of 5 units and the same center as the circle determined by  $x^2 - 8x + 7 + y^2 = 0$ ?

F.  $x^2 + y^2 = 25$   
 G.  $x^2 + (y - 4)^2 = 25$   
 H.  $(x + 4)^2 + (y + 4)^2 = 25$   
 J.  $(x + 4)^2 + y^2 = 25$   
 K.  $(x - 4)^2 + y^2 = 25$

**DO YOUR FIGURING HERE.**

39. The operation  $\square$  is defined by the following:

$$a \square b = 2 + a + b - a \cdot b$$

For example:

$$3 \square 4 = 2 + 3 + 4 - 3 \cdot 4 = -3.$$

If  $a \square b = b \square a$ , then which of the following describes all the possible values of  $a$  and  $b$ ?

- A. They are both positive.  
 B. They are both negative.  
 C. They are equal.  
 D. They have opposite signs.  
 E. They can have any values.
40. Super Fresh Market wants to divide its produce aisle into sections: citrus fruits, berries, and others, with berries being the smallest section. The aisle is 64 ft long and the ratio of the sections needs to be 3:2:3. How much space will the berries take up?
- F. 2 ft  
 G. 10 ft  
 H. 16 ft  
 J. 20 ft  
 K. 21 ft
41. Greg rode the train between two cities that were 450 miles apart. There were 6 stops between the two cities. The train stays at each stop for 10 min. If Greg needs to arrive at his destination in less than 4 hours, at least how fast must the train be traveling when it is moving?
- A. 80 mph  
 B. 110 mph  
 C. 135 mph  
 D. 150 mph  
 E. 161 mph





DO YOUR FIGURING HERE.

42. The first value of a geometric series is 4 and the third value is  $16x^2$ . What is the fifth value of this geometric series?
- F.  $8x$   
 G.  $32x$   
 H.  $32x^3$   
 J.  $64x^4$   
 K.  $64x^5$
43. An integer lies between 50 and 500. What are the odds that the integer is a multiple of 5?
- A. 1 : 5  
 B. 89 : 449  
 C. 90 : 449  
 D. 2 : 5  
 E. 90 : 499
44. If  $(x + y)^2 + 3x - y = 64$ , and  $x = 2$ , then what is a value for  $y$ ?
- F. -6  
 G. 5  
 H. 6  
 J. 9  
 K. 14
45. For all nonzero  $a$  and  $b$ ,  $(4a^3b^6)(12a^3b^8) / 8a^6b^7 = ?$
- A.  $6a^3b^{14}$   
 B.  $6b^7$   
 C.  $6ab^7$   
 D.  $8ab^7$   
 E.  $8a^2b$
46. If  $\cot \alpha = y/x$ ,  $x > 0$ ,  $y > 0$ , and  $0 < \alpha < \pi/2$ , then what is  $\sin \alpha$ ?
- F.  $\frac{x}{x^2 + y^2}$   
 G.  $\frac{x}{y}$   
 H.  $\frac{y}{x}$   
 J.  $\frac{x\sqrt{x^2 + y^2}}{x^2 + y^2}$   
 K.  $\frac{\sqrt{x^2 + y^2}}{x}$

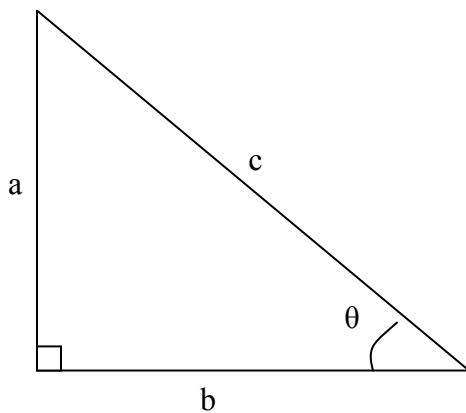


47. A rectangle has a length that is 4 times as long as its width. If both of the measurements are tripled, the area of the second rectangle is how many times as large as that of the first?
- A. 4  
B. 5  
C. 8  
D. 9  
E. 12

**DO YOUR FIGURING HERE.**

48. If  $(x + y)^2 = x^2 + 16x + z$ , and  $y$  and  $z$  are integers, what is the value of  $z$ ?
- F. 8  
G. 16  
H. 24  
J. 36  
K. 64

49. For the right triangle below, which of the following expressions is equal to  $\cot \theta$ ?

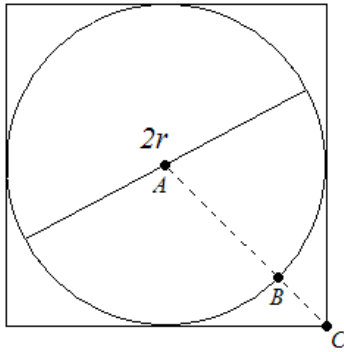


- A.  $a/b$   
B.  $b/a$   
C.  $a/c$   
D.  $c/a$   
E.  $c/b$



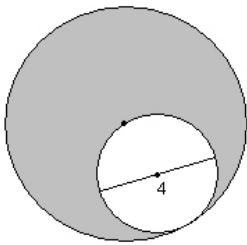
DO YOUR FIGURING HERE.

50. In the figure below, a circle with a diameter of  $2r$  is inscribed in a square.  $B$  is on both the circle and the line segment  $\overline{AC}$ . What is the distance of line segment  $\overline{BC}$ , in terms of  $r$ ?



- F.  $r/2$   
 G.  $r\sqrt{2} - r$   
 H.  $r\sqrt{2}$   
 J.  $2r$   
 K.  $r + \pi$

51. The figure below shows 2 circles such that the 4 inch diameter of the smaller circle is equal to half the diameter of the larger circle. What is the area, in square inches, of



- A.  $4\pi$   
 B.  $12\pi$   
 C.  $16\pi$   
 D.  $48\pi$   
 E.  $56\pi$



52. The third number in a sequence is 6 and every term in the sequence is 5 more than the term immediately preceding it. What is the value of the 101st term?
- F. 491  
G. 496  
H. 501  
J. 506  
K. 511

**DO YOUR FIGURING HERE.**

53. If  $a < b$ , which of the following must be true?
- A.  $ab < b^2$   
B.  $a^2 < b^2$   
C.  $2a > \frac{1}{2}b$   
D.  $-b < -a$   
E.  $2a + b < 2b$

54. If  $\log_a x = b$  and  $\log_a y = c$ , then  $\log_a(x/y) = ?$
- F.  $b/c$   
G.  $a - b$   
H.  $b - c$   
J.  $a/b$   
K.  $b^x$

55.  $N$  families agree to contribute equally to a gift for a teacher that costs  $D$  dollars. If  $P$  of the families fail to contribute, which of the following represents the amount, in dollars, that each of the remaining families must contribute to pay for the gift?
- A.  $D/N$   
B.  $D/(N-P)$   
C.  $N/D$   
D.  $(PD)/N(N-P)$   
E.  $D(N-P)/N$

56. Let  $f(x) = x^2 - 3$  for all real values of  $x$ . What is  $\frac{1}{2}f(\sqrt{y})$ ?
- F.  $y/2$   
G.  $(y-3)/2$   
H.  $(y+3)/2$   
J.  $(\sqrt{y}-3)^2/2$   
K.  $y-3$

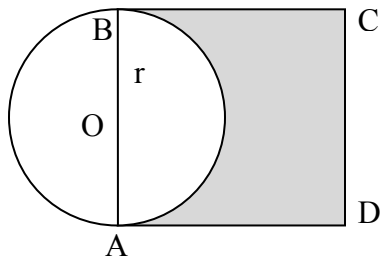
57. The expression  $(\cos^2\theta + 1 - \sin^2\theta) / (2 \sin\theta\cos\theta)$  is equivalent to which of the following?
- A. 2  
B.  $-\sin\theta\cos\theta$   
C.  $\tan\theta$   
D.  $\sin\theta\cos\theta/2$   
E.  $\cot\theta$



DO YOUR FIGURING HERE.

58. A plane spends ten percent of its airtime climbing to its height destination of 36,000 ft. During this time, the airplane travels an average speed of 320 miles/hr. It then spends another ten percent of its airtime descending from 36,000 ft at an average speed of 340 miles/hr. If the airplane's average speed in the air, from take-off to landing, is 400 miles/hr, what was the average traveling speed of the aircraft during its time at 36,000 ft?
- F. 353.3 miles/hr  
 G. 375 miles/hr  
 H. 405.75 miles/hr  
 J. 417.5 miles/hr  
 K. 421.25 miles/hr

59. In the figure below, AB is a diameter of the circle with center O,  $r$  is the radius of the circle, and ABCD is a square. What is the area of the shaded region in terms of  $r$ ?



- A.  $\pi(r^2 - 2)$   
 B.  $\pi(2 - \pi)$   
 C.  $r^2(\pi - 2)$   
 D.  $r^2(4 - \pi/2)$   
 E.  $r^2(2 - \pi/4)$
60. If  $rt \neq r$  and  $t = 1/r$ , which of the following expressions is equivalent to  $\frac{2(1-r)}{(t-1)}$ ?
- F.  $^{-1}/_2r$   
 G.  $-2t$   
 H.  $2r$   
 J.  $^{1/2r}/_{2t}$   
 K.  $-t$

END OF TEST 2  
 STOP! DO NOT TURN THE PAGE  
 UNTIL TOLD TO DO SO.  
 DO NOT RETURN TO THE PREVIOUS TEST.

## READING TEST

35 Minutes—40 Questions

**DIRECTIONS:** There are four passages in this test. Each passage is followed by several questions. After reading a passage, choose the best answer to each question and fill in the corresponding oval on your answer document. You may refer to the passages as often as necessary.

## Passage I

**PROSE FICTION:** This passage is adapted from *Ex Libris: Confessions of a Common Reader* by Anne Fadiman (©1998 by Anne Fadiman).

Long ago, when George and I were not yet married but seemed to be tottering in that general direction, we gave each other our first Christmas presents. Of course, they were books. This now seems very fitting since we both went on to be published authors. Sometimes I think that it was our love of books that drew us to one another. Knowing that I liked bears, George gave me *The Biography of a Grizzly*, by Ernest Thompson Seton. Modestly sequestered on the third page was the following inscription: *To a new true friend*. No Talmudic Scholar, no wartime cryptographer, no deconstructionist critic ever scrutinized a text more closely than I did those five words, hoping that if they were just construed with the right emphasis, they would suddenly reveal themselves as a declaration of undying devotion.

Knowing that George liked fish, I gave him *Old Mr. Flood*, by Joseph Mitchell, a slim volume of stories about the Fulton Fish Market. The author had autographed the book himself in 1948, but did I leave well enough alone? Of course not. I wrote: *To George, with love from Anne*. Then I mistranscribed a quotation from Red Smith. And finally—on the principle that if you don't know what to say, say everything—I added fifteen lines of my own reflections on intimacy. My cumulative verbiage, not to mention the potency of my sentiments, exceeded George's by a factor of approximately twenty to one. It's a miracle that the book, its recipient, and the new true friendship weren't all crushed under the weight of the inscription.

George married me anyway and has retained his affection for both fish and Joseph Mitchell. My words were preserved for good. Unlike the card that accompanies, say, a sweater, from which it is soon likely to part company, a book and its inscription are permanently wedded. This can be either a boon or a blot. My inscription did not improve *Old Mr. Flood* in the same way that, for example, *To Miss Elizabeth Barrett with the Respects of Edgar Allan Poe* improved *The Raven and Other Poems*. However, with each book

40 bought as a present, I continue to inscribe my own words on the flyleaf of the book.

Proper inscription etiquette is done on the flyleaf instead of the title page, which is traditionally reserved for a book's author. I learned this only recently, after having defaced dozens of other writers' title pages. I should have cracked the code years ago, since the Books by Friends and Relatives section of our own library contains a profusion of title-page inscriptions, all illicitly deployed. My father inscribed *Famous Monster Tales*, an anthology to which he contributed a preface when I was a sullen fourteen-year-old, *For Anne, from that old monster, Daddy*.

A distant rung down from the "presentation copy"—an inscribed book actually presented by the author as a gift—is the "inscription copy," a book inscribed at the owner's request. Before the advent of store-sponsored book signings, most readers got a book inscribed by mailing it to the author and praying that it would make a round-trip. Yeats once asked Thomas Hardy how he handled these requests. Hardy led Yeats upstairs to a large room that was filled from floor to ceiling with books—thousands of them. "Yeats," said Hardy, "these are the books that were sent to me for signature."

Maggie Hivnor, the paperback editor of the University of Chicago Press, once told me that when she adds an out-of-print title to her list, she calls the author and asks for a pristine copy that can be photographically reproduced. "The author is usually a man," she explained. "In a few weeks, a beautifully kept copy of his book arrives, a little dusty perhaps but otherwise absolutely perfect. And on the title page it invariably says *To Mother*."

Now *that's* a real inscription. The best thing about it is that until the editor's call, the book that it ennobled reposed precisely where it should have: in a place of honor on Mother's shelf. And there it shall return. How melancholy, by contrast, are the legions of inscribed copies one finds in any used-book rack, each a memorial to a betrayed friendship. Do the traitors believe that their faithlessness will remain a secret? If so, they are sadly deluded. Hundreds of people will witness it, including, on occasion, the inscriber. Fortunately, the very finest

inscriptions, like the finest love letters, rarely pass out of a family.

85 The best inscription *I've* ever gotten is on the title page of *The Enigma of Suicide*, by George Howe Colt. It reads (how far we have come, George, since our true friendship!) *To my beloved wife...This is your book, too. As my life, too, is also yours.*

1. By using the word *verbiage* (line 24) to describe her inscription, the author implies that her inscription was:
  - A. sensitive.
  - B. emotional.
  - C. verbose.
  - D. in love.
2. Which of the following would the author most likely agree with?
  - F. Inscription writing is more personal than buying a card.
  - G. Inscriptions are often misplaced, lost, or discarded.
  - H. The importance of inscriptions is exaggerated.
  - J. It is always easier to inscribe a book than to invest in a card.
3. This passage is best described as being:
  - A. an analysis of the relationship between two writers.
  - B. an explanation of the art of inscription writing.
  - C. an argument supporting the purchase of books as gifts.
  - D. a personal commentary on the art of inscription writing and how it can reflect on a relationship.
4. According to the passage, why is it customary to inscribe on the flyleaf of a book as opposed to the title page?
  - F. Some books do not have title pages.
  - G. There is more room to write on the flyleaf than on the title page.
  - H. The title page is set aside for the author's inscription.
  - J. The flyleaf is traditionally reserved for handwritten prefaces.
5. Lines 10-15 explain that the author:
  - A. did not believe that her boyfriend's words were true.
  - B. scrutinizes all inscriptions.
  - C. deeply analyzed her boyfriend's inscription.
  - D. wished her boyfriend had written a longer inscription.
6. The fifth paragraph (lines 53-63) suggests that before in-store book signings, authors often:
  - F. had to hire someone to sign all of the books that people sent them.
  - G. did not have time to put their signature on every book that they were sent.
  - H. did not print as many copies of books as they do now.
  - J. did not choose to personally inscribe their books for fans.
7. According to the author, the act of selling or giving away a book inscribed by a friend is to:
  - A. betray that friendship.
  - B. give a price to that friendship.
  - C. regret that friendship.
  - D. deny that friendship.
8. Why does the author refer to the success of her relationship as a "miracle" (line 27)?
  - F. to stress the serious implications of his gift.
  - G. to hint at divine intervention.
  - H. to poke fun at her own mistake.
  - J. to illustrate the wonder of love.
9. When the author writes "This can be either a boon or a blot." (line 35), she is saying that the wedding of an inscription and a book:
  - A. can permanently accentuate or detract from the gift.
  - B. definitely has its disadvantages.
  - C. can improve or impair the physical state of the book.
  - D. can be appreciated and loathed.
10. As it is used in line 77, the word *melancholy* most nearly means:
  - F. tattered.
  - G. dignified.
  - H. sad.
  - J. neglected.

## Passage II

**SOCIAL SCIENCE:** This passage is adapted from an article in *Star City Sports* by John Baylor (©2002). WNBA stands for Women's National Basketball Association.

Television is the mother's milk of big-time, high-revenue sports. With television, the WNBA is successful. Without it, volleyball struggles for attention. Television rights fees help pay for college athletic departments and huge pro salaries. As much as you may love big-time sports, consider the social impact of its marriage partner: television, America's encouraged addiction.

According to a 1999 A.C. Nielsen survey, an average two-to-eleven-year-old child spends more than thirty-one minutes with TV to every one minute of meaningful conversation with mom and dad. Eighty-one percent of fourth graders watch more than two hours of TV a day. While just thirty minutes of practice a day for a few years can make a young person more than proficient at a musical instrument, the average American child, ages two to eleven, watches television 2.85 hours a day. If you assume eight hours a day of sleep and sixteen hours of consciousness, that's sixty-five full days of consciousness per year consumed by TV, more than two months. And for every three hours of school instruction, our kids average five hours of TV. Also, these TV viewing numbers do not include Internet or computer game use. We condition our young to watch. Or deferring to modern jargon: we enable. An addiction? How about an epidemic.

Twenty-five percent of two to eleven year olds have TVs in the bedroom. So one-fourth of kids at that tender age have parents who give TV intimate access to the child. Even more surprising is that a spring 2005 USA Today poll found that America's youth demand television access. Therefore, a staggering sixty-eight percent of Americans, age eight through eighteen, have a TV in the bedroom. Twenty-five percent of teenagers, ages thirteen to seventeen, can tell you where the US Constitution was written, while seventy-five percent of teenagers know where you find the zip code 90210. The average American child watches TV commercials for more than the equivalent of ten full, non-stop days a year. Sports programming helps make TV captivating and addictive.

A summer 1999 report by the American Academy of Pediatrics reads: "TV can harm children. Babies and toddlers need direct interaction with parents and other caregivers to develop mentally, socially, and emotionally, and if they're watching TV, they're not getting that interaction." The pediatrics academy goes on to say that kids should not have TVs or computers in their bedrooms.

A September 1999 Brown University study linked TV viewing by children with sleep deprivation. The researchers say that TV stimulates children, while parents may view it as sedating and may not realize the irony. These researchers recommend a cool down or reading period for children before bed.

Other studies have linked television with depression, apathy, paranoia, aggression, dangerous copycat behavior, sexual promiscuity, poor school performance, obesity, reduced attention spans, and poverty. In fact, the cycle of poverty, the inter-generational grip poverty has on thousands of American families, is often related to excessive television viewing and its dampening effects on motivation.

But some might argue that watching Michael Jordan inspires kids from the couch towards the playgrounds and gyms. Yet after TV, the internet, and computer games, just how much waking time remains for exercise? And the current childhood obesity epidemic suggests that we have a perfect storm: the confluence of TV, fast food, and absent parents.

The deleterious effects of television are not wasted just on the young. Again, according to the A.C. Nielsen Company: sixty-six percent of US families regularly watch TV while eating dinner: two-thirds! By age 65, the average American has spent nearly nine years glued to the tube, logged an average of nearly four hours a day, almost fifty-two days of non-stop viewing a year, and has spent almost two full, non-stop years of life watching TV commercials.

Many TV devotees view sports as one of the good things on TV. This is the defense used by many. And they're right. Healthy programming does exist—CSPAN, the History and Learning channels, and Public Television can teach a lot. But inevitably the thumb gets trigger-happy and the surfing begins. And even if you and all your family members stay disciplined on the good stuff, the hours accumulate. Are the joys of good TV equal to the joys of many of the alternatives, including music, playing sports, reading, and conversation? Do the few examples of healthy programming truly outweigh all the drawbacks?

Mountains of evidence suggest that the American family itself would greatly benefit from no more than one television in every American home. In all the serious research studies done with people on their death beds, no one has ever stated a regret that he watched too little TV.



11. What concept does the author use the research of the American Academy of Pediatrics to support?
- That television watching thwarts children's musical talents.
  - That television watching causes sleep deprivation in children.
  - That television watching negatively affects the mental, social, and emotional development of children.
  - That time spent watching television is inversely related to a child's IQ.
12. Why does the author refer to television and big-time sports as a married couple (line 6)?
- Because television fees subsidize college athletic departments.
  - He thinks that college athletic departments financially rely too often on television revenues and not enough on ticket sales.
  - Because without television, big-time sports would not exist.
  - Because athletes get more air time on television than politicians do.
13. The above passage can best be described as:
- One person's view of the negative effects of watching television versus the benefits of reading.
  - A thorough analysis of children's television watching habits.
  - A historical explanation of television and its effects on society.
  - An opinion piece citing a compilation of studies that support the claim that television has harmful effects on the population as a whole.
14. Which of the following pieces of evidence, if true, would most weaken the author's primary argument?
- Avid reading is strongly correlated with stomach ulcers, poor eyesight, and antisocial behavior.
  - Over half of the time high school students spend watching television is done with friends or family.
  - Fewer televisions were stolen last year than in the two previous years combined.
  - The amount of television watched every week is statistically independent of time consumed by work, sleep, exercise, or social interaction.
15. Which of the following would the author most likely agree with?
- TV, though not completely unhealthy, harms much more than it helps.
  - Television inspires young people to achieve.
  - Television is an encouraged addiction that should be purged from all American homes.
  - Television watching is an excellent way for families to spend more time together.
16. What is the best explanation for why the author refers to television as "America's encouraged addiction" (line 7)?
- Because televisions have such a dominating presence inside homes.
  - Because new studies reveal that televisions may encourage addictive behavior in kids.
  - Because television dampens motivation.
  - Because television, despite countless negative outcomes associated with its use, endures no social stigma.
17. It can be inferred that the author acquired his opinion about television by:
- watching television himself.
  - talking to child psychologists.
  - researching statistics about television watching in America.
  - performing studies that examine how often children watch TV.
18. Which of the following does the author NOT include as a harmful effect of watching television?
- Compromised academic performance
  - Apathy
  - Poor diction
  - Aggression
19. According to the passage, it can be inferred that, when it comes to television, the author is:
- contemptuous.
  - disinterested.
  - complementary.
  - ambivalent.
20. Which of the following most accurately describes the main point of the second to last paragraph (lines 75-86)?
- Although healthy programming does exist on TV, the alternatives may be better.
  - There should be a one television limit in all homes in America.
  - Sport programs on television encourage kids to exercise and compete in athletics.
  - Watching healthy TV programs is just as beneficial as the alternatives.

## Passage III

**HUMANITIES:** This passage is authored by George Colt  
©2005, George Colt).

The pilgrims come from Rhode Island, from Iowa, from Texas. Driving north along the Maine coast, they smile with recognition at the weathered old barns, the iron-gray ocean, the fields spangled with goldenrod and Queen Anne’s lace. When a split-level ranch house intrudes, they frown. It doesn’t fit their picture. The road crests through a dark stand of pine, and there, on a knoll high above the Atlantic, they finally glimpse the reason they have traveled all those miles: a decrepit 18<sup>th</sup> century clapboard farmhouse.

One art historian has called this ramshackle structure America’s Parthenon. America’s Lourdes might be more apt. People come here not to inspire the intellect but to salve the soul. Some write poems, some sketch, some leave flowers. Some walk down the hill and kneel—in a never quite successful attempt to imitate that famous, awkward, yearning pose—where they think she knelt. The Painting is not here; it resides at the Museum of Modern Art in New York City. But in the gift shop, visitors can linger before dozens of reproductions—on postcards and posters—of *Christina’s World*, painted in 1948 on the second floor of this house.

Before they leave, the pilgrims hover over the guest book to pour out their feelings to the man who transformed Christina Olson, crippled daughter of a Swedish sailor, into a symbol of pain and longing: “This is like visiting Assisi and touching the stones that Francis touched.” “You have been part of my life for over thirty years.” “Thank you for being America’s painter.”

In an age when many people would be hard-pressed to name one other living American artist, Andrew Wyeth is so well known that he has achieved mythic, indeed beatified, stature. The characters in his paintings have become icons, and the places where they were painted have become secular shrines. He is surely the only American artist whose name, mutated into an adjective, is used to boost real-estate sales. His critics can be withering. “Nostalgic” and “vacuous” are among their putdowns, when they deign to consider him at all. But as the catalogue of a recent Wyeth exhibit—titled, of course, America’s Painter—put it, “Say what we will about art; Wyeth can take your breath away.”

And the people whose breath has been taken away feel possessive. If Wyeth is America’s Painter, that means he is theirs. Many of the entries in the Olson House guest book begin not “Dear Mr. Wyeth” but “Dear Andy” and sound as if the writers expect the artist to read them every

night—as if he lived in the museum, instead of on a remote island eight miles away. Because they know the paintings so well, people believe they also know the painter. They assume that his character is as sere as one of his landscapes. But they might be surprised at the multiplicity of selves that lie like layers of impasto over the essential, unknowable core.

As I travel north to spend a day with Andrew Wyeth, I find myself thinking of a story I’d read. One Halloween, Wyeth, whose love of disguises is legendary, wore a gorilla mask. When he opened the door to a pack of young trick-or-treaters, they became frightened. “Don’t worry,” he said. “I’ll take off the mask.” He removed the gorilla mask. Underneath, his face and hair were painted skull white. A glass eye was affixed to his cheek.

To reach Wyeth’s island, I take a boat from Port Clyde, a lobstering village across the St. George River from Cushing, where the Olson House is located. Wyeth has spent every summer since he was a child in the fields and waters near here, a region one aide calls “Wyeth North.” Two years ago, he and his wife moved four miles offshore to Benner Island, an uninhabited speck too tiny to appear on most maps. Bill Stuart, a Wyeth employee, steers the 25-foot Boston Whaler through waters speckled with lobster buoys. Every six seconds or so, I hear a foghorn’s baleful moo. And then Benner Island, rugged and rock-strewn, appears out of the fog. Standing alone on a long wooden wharf is Wyeth.

He wears a navy peacoat over a gray turtleneck sweater and white jeans spattered with gray paint. The Maine sun has tanned him to a caramel hue, his face as weather-beaten as a Wyeth barn. His light blue eyes glitter from behind heavy lids. When I shake his hand, I notice he has surprisingly long, thin fingers, and that the moons of the nails are encrusted with dried paint. Although he is nearly six feet tall, he seems smaller. His face has an elfin quality, abetted by rather large ears. One of his best-known techniques is painting the complete background so that the figure, when finally superimposed, seems to pop out of the landscape. Wyeth himself is so full of spirit and spark that he, too, seems to pop out of his surroundings.

21. The main purpose of the third paragraph (lines 23-29) is to:
- describe the importance of Wyeth’s painting, *Christina’s World*.
  - explain the possessive feelings that many of Andrew Wyeth’s admirers have.
  - compare Andrew Wyeth to Francis of Assisi.
  - convey the deep feelings that Andrew Wyeth’s admirers have for him.

22. As it is used in lines 32-33 the phrase *mythic, indeed beatified, stature* most nearly means that Wyeth is:
- F. popular and admired.
  - G. a legend.
  - H. a fictitious character exalted by his fans.
  - J. a talented artist.
23. Which of the following most accurately describes how Wyeth's fans perceive him?
- A. Uncomplicated
  - B. Dry
  - C. Pensive
  - D. Forthright
24. The author most likely uses paragraph six (lines 55-62) to tell a story about Wyeth in order to imply that:
- F. Wyeth's love of disguises is legendary.
  - G. he understands Wyeth's unpredictable personality.
  - H. young people are scared of Andrew Wyeth.
  - J. perhaps Wyeth's fans don't know him as well as they think.
25. Where is the original painting, *Christina's World*, displayed?
- A. At the Wyeth museum in Maine.
  - B. At Wyeth's new home on Benner Island.
  - C. At the Museum of Modern Art in New York City.
  - D. At Andrew Wyeth's childhood home: "Wyeth North."
26. Why are the pilgrims that come to visit the birth place of *Christina's World* disappointed when they see a split-level ranch house?
- F. They do not like split-level houses.
  - G. They expected to see the decrepit 18<sup>th</sup> century clapboard house.
  - H. They expected to see a picture of a split-level house.
  - J. Split-level ranch houses produce feelings of nostalgia, making them want to return home.
27. When the author states that "One art historian has called this ramshackle structure America's Parthenon" (lines 11-12), what is this art historian most likely suggesting?
- A. That this farmhouse has had dramatic effects on American culture throughout American history, as is the case with the Parthenon throughout Greek history.
  - B. That the Andrew Wyeth museum is characterized by its religious significance.
  - C. That people flock to this farmhouse year after year, just as they do to see the Parthenon.
  - D. That this farmhouse has suffered from the ravages of time, just as is the case with the ancient Parthenon in Athens.
28. As implied in the passage, what is the primary reason that people travel hundreds of miles to see a dilapidated 18<sup>th</sup> century clapboard house?
- F. To see the setting for Andrew Wyeth's famous painting, *Christina's World*.
  - G. To visit Andrew Wyeth's candy shop and to tell him how much he means to them.
  - H. To see Andrew Wyeth, who often greets them in person.
  - J. To study a quintessential example of New England architecture.
29. The last paragraph (lines 76-88) can most accurately be described as:
- A. a physical description of Andrew Wyeth and his surroundings.
  - B. a comparison between Andrew Wyeth and his paintings.
  - C. the author's detailed opinion of Andrew Wyeth and his paintings.
  - D. an explanation of Andrew Wyeth's painting techniques.
30. The author uses all of the following to describe the importance of Andrew Wyeth EXCEPT:
- F. opinions from Wyeth's fans.
  - G. a quotation from the catalogue of a recent Wyeth exhibit.
  - H. evidence of the impact that his paintings have had on the American population.
  - J. a discussion that the author had with Andrew Wyeth.

## Passage IV

**NATURAL SCIENCE:** This passage is authored by Joel Keralis (©2005, Joel Keralis).

Most people associate the term *entomology* (the study of insects) with bug-spraying and butterfly-collecting. In reality, however, entomology affects society in a tangible and practical sense—extending  
5 beyond the dark corners of basements and the collections of bug enthusiasts.

Entomology is the study of species from the animal class Insecta. Insects typically have hard, chitinous exoskeleton that protects their delicate inner organs. This hard covering gives the insect’s tri-segmented body all the  
10 support that an ossified endoskeleton provides a human. Insects are well equipped for a variety of mobile activities with jointed appendages like their two antennae, four wings, and six legs.

Insects are among the most numerous classes in the  
15 animal kingdom with as many as 20 to 30 million species grouped by physical characteristics into approximately 29 major orders. It is this titanic number of organisms and the amazing diversity among the many species that has allowed the class to prosper since time began.

In recent years, one of entomology’s practical applications—forensic entomology—has received some glamour on popular crime-drama television shows. These programs often depict the expertise of a forensic entomologist, who helps examine evidence from a crime  
25 scene. A skilled forensic entomologist can tell almost exactly how long a body has been dead simply by analyzing the insects that are found on the corpse. The insects on a corpse can also lend information to the time of day that the death occurred, the manner of the death,  
30 and the location of the killing.

Agriculture science has also substantially benefited from the knowledge gained by entomology. Insects are major causes of damage to crops and livestock, and their control is necessary for the maximization of profit by an  
35 agricultural organization. Many types of insects feed on food crops and can sometimes even destroy an entire crop. For instance, in the Dust Bowl era, locust swarms were massive enough to blot out the sun and were capable of eating an entire field clean in one sitting. Now, through  
40 advancements in our understanding of insects and in our methods of extermination, we are able to control the locusts to the level at which they are no more than a minor hindrance.

Yet another important scientific application of  
45 entomology has been in the field of medicine. In the past, diseases transmitted by insects like bubonic plague, malaria, and yellow fever were major killers in the United States as well as around the world. Fortunately, entomologists were able to determine the specific insects that transmitted these deadly diseases. Then, by studying these insects and diseases, entomologists were able to find more appropriate and effective ways to both treat diseases and eliminate the threat of the disease by controlling the populations of the insects that transmit the diseases. Thanks to their work, these diseases have been almost completely removed from the United States. West Nile Virus, transmitted by mosquitoes, presents a new, unsolved challenge for entomologists in the U.S. and abroad.

The applications of entomology exist outside of the science lab, as well. In fact, we come into contact with entomology frequently in our daily lives. You don’t think  
60 about the entomological research that went into the development of DEET when you put on some bug spray, but you trust its effectiveness nonetheless. In the same way, you don’t necessarily consider how ladybugs benefit your garden, or why insects are so attracted to your porch lights at night. Nonetheless, all of these phenomenon  
65 affect your life whether or not you understand the entomological science behind them.

The prevailing opinion of the general public is probably that “the only good insect is a dead insect.” This mindset often results in the overuse of pesticides and bug sprays. Usually, these chemicals are deployed at the  
70 slightest threat of an insect, often causing more damage than good because the pesticides also kill many beneficial insects that are actually helping you in a variety of different ways. Remember that applying poison is not  
75 always the best method of rectifying a problem with insects. If pesticides do need to be applied, it is most important to follow the directions on the pesticide’s label.

The most important thing to remember regarding  
80 insects is that almost all of them are completely harmless, and even the few that are capable of a semi-painful sting or bite will typically not attack unprovoked. It is not necessary to avoid a bee or a wasp at all costs. As long as  
85 you ignore it, it will almost always ignore you. Do not make any sudden or threatening movements. Of course, when in doubt, always call a professional entomologist.

31. According to the passage, an insect’s exoskeleton is made of what material?
- A. Bone
  - B. Chitin
  - C. Ossius
  - D. Cartilage

32. To allow for movement, an insect's appendages are:
- F. jointed.
  - G. stiff.
  - H. whip-like.
  - J. bony.
33. According to the passage, which of these are important branches of entomology?
- I. Agricultural
  - II. Forensic
  - III. Dietary
  - IV. Medical
- A. I and II Only
  - B. II and III Only
  - C. I, II, and IV Only
  - D. I, II, III, and IV
34. According to the passage, the Dust Bowl era did NOT reinforce which concern?
- F. That locust swarms have the ability to devastate an entire crop.
  - G. That insects can be lethal, destroying crops and harming livestock.
  - H. That locust swarms have the ability to blot out the sun.
  - J. That locust swarms would be no more than a minor hindrance.
35. Which of the following statements is implied in the author's discussion of forensic entomology (lines 20-30)?
- A. The location of insects on a corpse is irrelevant for determining time of death.
  - B. If it were a useful tool of investigation, forensic entomology would not have captured the public's interest.
  - C. Forensic entomology's utility as a crime-solving tool is dependent on the proficiency of the investigator.
  - D. The recent flurry of attention given to forensic entomology obscures its actual importance.
36. According to the passage, insects found on a corpse can NOT tell a forensic entomologist:
- F. approximate time of death.
  - G. the manner of the death.
  - H. how long the corpse has been dead.
  - J. about the victim's diet just before death.
37. What does the passage say is a common link among the diseases of malaria, yellow fever, and bubonic plague?
- A. They are insect-transmitted diseases that have killed many people but have since been brought under control in the United States.
  - B. They are insect-transmitted diseases that kill thousands of Americans every year.
  - C. They are insect-transmitted diseases that have been eradicated through entomologic research.
  - D. They are insect-transmitted diseases, which are no longer a threat because of newly discovered vaccines.
38. Which of the following titles best captures the purpose of the essay?
- F. Advantageous Insects
  - G. The World of an Entomologist
  - H. Everyday Entomology
  - J. Insects and Agriculture
39. What is the main point of the eighth paragraph (lines 68-79)?
- A. Pesticides, though helpful, can be harmful if misused.
  - B. Pesticides should never be used by non-professionals.
  - C. Pesticides kill advantageous insects.
  - D. "The only good insect is a dead insect."
40. According to the passage, which of these statements about stinging insects is TRUE?
- F. Stinging insects are particularly dangerous because they are aggressive.
  - G. Do your best to stay away from all stinging insects.
  - H. Defend yourself by moving to scare them away.
  - J. If you leave them alone, they will leave you alone.

**END OF TEST 3**  
**STOP! DO NOT TURN THE PAGE**  
**UNTIL TOLD TO DO SO.**

**36 DO NOT RETURN TO ANY PREVIOUS TEST.**





## SCIENCE TEST

35 Minutes—40 Questions

**DIRECTIONS:** This test consists of seven passages. Questions follow each passage. Choose the best answer from among the choices given, and fill in the corresponding oval on your answer sheet.

You may NOT use a calculator on this test

### PASSAGE I

A heavy block was placed at the top of a frictionless incline. Students wished to find out how the gravitational force ( $mg \sin \theta$ ) changes when different variables are altered.

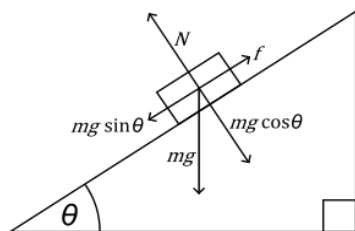


Figure 1

#### Experiment 1

The students kept the incline plane at  $30^\circ$  and at standard acceleration due to gravity of  $9.8 \text{ meters/second}^2$  ( $9.8 \text{ m/s}^2$ ). They changed the mass of the block with the following results:

Table 1

Mass (kg)	Gravitational Force ( $\text{kg}\cdot\text{m/s}^2$ )
1	4.9
1.5	7.35
2	9.8
3	14.7
5	24.5

#### Experiment 2

The students wanted to see how a change in gravity would affect the system. They simulated the gravity on other planets using a vacuum chamber. They kept the block at 1 kg and changed the plane to a  $45^\circ$  angle. The results are as follows:

Table 2

Planet	Gravity ( $\text{m/s}^2$ )	Gravitational Force ( $\text{kg}\cdot\text{m/s}^2$ )
Moon	1.6	1.1
Mars	3.8	2.7
Earth	9.8	6.9
Neptune	11.2	7.9
Jupiter	24.8	17.5

#### Experiment 3

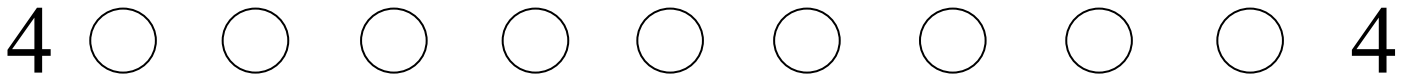
The students returned their attention to Earth's gravity, where the acceleration due to gravity stays constant at  $9.8 \text{ m/s}^2$ . They decided to test how changing the angle of the plane affects the gravitational force. The mass of the block was kept at 1 kg. The results are shown in table 3.

Table 3

Angle of plane ( $^\circ$ )	Gravitational Force ( $\text{kg}\cdot\text{m/s}^2$ )
10	1.7
30	4.9
45	6.9
70	9.2
90	9.8

- Which of the following statements best explains the behavior of the gravitational force when the mass of the block was changed?
  - The gravitational force remained constant.
  - The gravitational force decreased as the mass increased.
  - The gravitational force increased as the mass increased.
  - The gravitational force increased and then decreased as the mass decreased.
- To have the lowest possible gravitational force, what should the students do to the experiment?
  - Decrease the mass of the block and lower the angle of the incline.
  - Decrease the mass of the block and raise the angle of the incline.
  - Increase the mass of the block and lower the angle of the incline.
  - Increase the mass of the block and raise the angle of the incline.
- Based on Table 3, if the incline of the plane were reduced to  $5^\circ$ , the gravitational force for a 1 kg block would be closest to:
  - $1 \text{ kg}\cdot\text{m/s}^2$
  - $5 \text{ kg}\cdot\text{m/s}^2$
  - $7 \text{ kg}\cdot\text{m/s}^2$
  - $10 \text{ kg}\cdot\text{m/s}^2$

4. The acceleration due to gravity on the Sun is  $272 \text{ m/s}^2$ . What might the students estimate is the gravitational force of a block with a mass of  $1 \text{ kg}$  and an incline of  $45^\circ$ ?
- F.  $345 \text{ kg}\cdot\text{m/s}^2$
  - G.  $252 \text{ kg}\cdot\text{m/s}^2$
  - H.  $192 \text{ kg}\cdot\text{m/s}^2$
  - J.  $160 \text{ kg}\cdot\text{m/s}^2$
5. If Experiment 2 were repeated on Mars with an incline of  $30^\circ$ , how would the results change?
- A. The gravitational force would be higher than  $2.7 \text{ kg}\cdot\text{m/s}^2$ .
  - B. The gravitational force would be lower than  $2.7 \text{ kg}\cdot\text{m/s}^2$ .
  - C. The gravitational force would equal  $2.7 \text{ kg}\cdot\text{m/s}^2$ .
  - D. There is not enough information to determine the answer.
6. If any of these three experiments were conducted on an inclined plane made of plywood, rather than a frictionless incline, how would the results be affected?
- F. Increased friction would increase the mass of the objects.
  - G. Increased friction would decrease the mass of the objects.
  - H. Increased friction would decrease the effect of the gravitational force.
  - J. Increased friction would increase the effect of the gravitational force.



**PASSAGE II**

Colony Collapse Disorder (CCD) is the name given to the phenomenon of honey bees disappearing from their hives. Many bee farmers have found that hundreds of living, active hives are suddenly devoid of bees, even though larvae and eggs remain intact. In a healthy hive, 10% to 20% of the bees originally within the hive can be absent. This attrition generally peaks in the winter.

Several possible causes have been proposed as the reason for CCD. One theory postulates that a *neonicotinoid*, or nicotine-based pesticide, attacks a bee’s nervous system, causes memory loss, and makes it impossible for the bee to find its way back to the hive once it has left. Another theory is that the *Israeli Acute Paralysis Virus* (IAPV) kills bees once they have left the hive. A third theory states that bee farmers, who transport bees long distances to various crop fields, have caused undue stress to the bees, causing them to die.

*Experiment 1*

A group of environmental students decided to determine which theory was correct. They obtained two live, healthy hives and placed each in a field of identical vegetation away from the other hives to avoid cross contamination. On Day one, Hive #1 was the control hive and was left alone. The bees in this hive were not exposed to anything unusual in their environment. Hive #2 was sprayed with a neonicotinoid. Because bees do not fly at night, the remaining bees in the hive were counted over a period of five days. The results are shown in Table 1.

**Table 1**

	Initial Count	Day 1	Day 2	Day 3	Day 4	Day 5
Hive 1	1,200	1,099	943	822	704	651
Hive 2	1,200	987	1,089	502	332	159

*Experiment 2*

The students decided to add a third hive of 1,200 bees which they exposed to IAPV. In this experiment, Hive #1 was a control hive of 1,200 bees. Hive #2, also consisting of 1,200 bees, was sprayed with a neonicotinoid. Hive #3, beginning with the same number of bees, was exposed to IAPV. All three hives were kept completely separated in fields of identical flora. The results of the study are shown in Table 2.

**Table 2**

	Day 1	Day 2	Day 3	Day 4	Day 5
Hive 1	1,200	1,045	951	712	599
Hive 2	1,200	901	765	511	220
Hive 3	1,200	887	523	120	0

*Experiment 3*

Students added a fourth hive to test the theory that bees were being over stressed. All four hives were healthy and began with 1,200 bees. Hive #1 was a control. Hive #2 was again sprayed with a neonicotinoid. Hive #3 was exposed to IAPV. Hive #4 was transported by truck 200 miles to its field. The bees returning to the hive were again counted over the course of five days. The results are shown in Table 3.

**Table 3**

	Day 1	Day 2	Day 3	Day 4	Day 5
Hive 1	1,200	1,101	903	882	641
Hive 2	1,200	889	701	564	190
Hive 3	1,200	875	499	98	0
Hive 4	1,200	1,115	1,003	855	603

7. Looking at the results of all three experiments, which of the following was the greatest contributing factor to Colony Collapse Disorder?
  - A. neonicotinoids
  - B. IAPV
  - C. stress
  - D. cross contamination
  
8. Students realized that there was a possibility that some of the fields they used may have been previously sprayed with a pesticide, skewing the results of their experiments. What further control could they place on their experiment that would remove this variable?
  - F. increase the number of bees
  - G. add a hive that is contained indoors as a control
  - H. use the same field in each experiment, rotating hives
  - J. decrease the number of hives



9. The data collected from Experiment 1 shows that:
- A. neonicotinoids have no effect on bees.
  - B. neonicotinoids have a minimal effect on bees.
  - C. neonicotinoids are a significant contributing factor to Colony Collapse Disorder.
  - D. neonicotinoids are the only cause of Colony Collapse Disorder.
10. Based on the data from Experiment 3, in the hive subject to IAVP, how many bees returned to the hive on Day four when the bees were counted?
- F. 98
  - G. 499
  - H. 564
  - J. 882
11. The purpose of the control hive in all three experiments was to:
- A. prove that Colony Collapse Disorder does not exist.
  - B. show that neonicotinoids are the primary cause of CCD.
  - C. determine if the fields used were safe for the bees.
  - D. measure the hive activity in a normal environment.
12. The students have determined that many factors work together to contribute to Colony Collapse Disorder. Is this conclusion supported by the data?
- F. Yes, because the number of bees declined in every hive in each experiment.
  - G. Yes, because only the control hive maintained its numbers over time.
  - H. No, because IAVP reduced a colony's bee count to zero over four days.
  - J. No, because neonicotinoids were introduced in all three experiments.
13. Based on the experimental data, which of the following conclusions is the most supported?
- A. IAVP is the only cause of Colony Collapse Disorder.
  - B. Bees rarely abandon hives naturally without any cause.
  - C. Some of the contributing factors to Colony Collapse Disorder remain unknown.
  - D. Neonicotinoids do not play a role in Colony Collapse Disorder.

**PASSAGE III**

Two scientists explain the disappearance of honeybees. All over the world, bees are decreasing in numbers and are not producing honey or pollinating plants and flowers at previously recorded levels.

*Scientist 1*

The death of so many bees reveals that our environment is polluted and needs our help. Although other species are capable of pollination, none do so as efficiently as the honeybee. About a third of what we eat comes from crops pollinated by honeybees. Bee pollination is particularly important to specialty crops like almonds, berries, tree fruit, and many vegetables. A likely cause of damage to honeybee populations is that hives are subjected to high levels of ultraviolet radiation. The Earth's ozone layer has been severely damaged by air pollution, allowing more ultraviolet radiation to reach the surface and damage bee hives. In one experiment, when wasp eggs were subjected to ultraviolet radiation, 85 percent of them died before hatching. It seems the same mechanism is at work with honeybees.

Another suspect is pesticides. When scientists studied wax from old hives in Washington State, they found significant levels of insecticides, herbicides, miticides and fungicides. One study that examined the effects of these chemicals on bees found that adults raised in contaminated hives had significantly reduced lifespans.

*Scientist 2*

There are serious flaws in the argument that air pollution has contributed to the decline of honeybees around the world. The experiment in ultraviolet radiation's effects on eggs was done in wasps, not bees. Bees' eggs are different and have a structure that can actually repair damage done by radiation. Pesticides can do harm, but the researchers tested levels hundreds of times higher than those seen in the hives in Washington State, which had the highest pesticide levels in the nation. Further, it has been shown that those areas with high pesticide levels and those with low numbers of bees do not match. No study yet has been able to tie a particular substance with a loss in numbers of bees.

It is probable that there is more than one cause for the decreasing number of honeybees in the world. Only one reason – a pathogen known as *nosemaceranae* – has been thoroughly substantiated. This pathogen, which lives in the honeybee intestinal system, undermines a bee's ability to process food. When present in great concentrations, it starves a bee to death. *Nosemaceranae* has been shown to be a resilient enemy. After treating hives with a megadose of the antibiotic fumagillin, the pathogen levels in one study actually increased. *Nosemaceranae* probably works in conjunction with other disorders to cause mass hive deaths.

14. The two scientists agree that:
- F. Pollution is the main cause of bee death.
  - G. There is a worldwide epidemic of death in bees.
  - H. The main cause of pollination problems is radiation.
  - J. Parasites cause bees to starve to death.
15. Scientist 2 challenges the evidence of pesticides as the cause of the problem because:
- A. The study cited by Scientist 1 used dosages not found in nature.
  - B. Pesticides have been shown to be safe.
  - C. The necessary experiments were done on wasps, not bees.
  - D. It has been shown that parasites are the cause of the problem.
16. According to Scientist 2, an important fact that Scientist 1 has overlooked is:
- F. It has been shown that radiation has no effect on wasps.
  - G. Wherever honeybees are dying, there are parasites present.
  - H. There has been no increase in ultraviolet radiation as the ozone layer becomes depleted.
  - J. There is no correlation between the location of dying bees and the presence of high concentrations of pesticides.
17. The position taken by Scientist 1 would be strengthened most by the discovery that:
- A. High concentrations of parasites are present in some hives where bees are dying.
  - B. Bees are not dying everywhere, but bee deaths are greater in regions where ultraviolet radiation is less strong.
  - C. There is a specific and common pesticide that causes bees to die.
  - D. Pesticides are found in hives where bees are healthy and strong.
18. What likely response would Scientist 1 make to the comments of Scientist 2?
- F. Scientist 2 is wrong because it is known that honeybee deaths are caused by environmental pollution.
  - G. Scientist 2 is damaging the international effort to stem the honeybee deaths.
  - H. Even if Scientist 2 is right, the world must still deal with the problem of overuse of pesticides, a process that can only benefit bees.
  - J. In the face of a worldwide problem of air pollution, it is a questionable use of resources to study bees.

**PASSAGE IV**

There are typically two situations which cause soil erosion. One is when the intensity of the rainfall exceeds the *infiltration rate*, or rate at which the soil can absorb water. The other is when the soil surface becomes saturated with water and the rainfall intensity exceeds the *percolation*, or flow through the soil. In the second instance, there will be a downward or lateral movement of the seepage soil.

There are several ways in which to measure soil erosion. In the *reconnaissance method*, changes in soil surface at the point of soil loss are measured. The *volumetric method* involves three-dimensional observations of soil runoff, typically when it is caught by a reservoir.

*Study 1*

Four 1m<sup>2</sup> erosion plots were designated in locations with different land use types: (1) on bare soil in a blueberry bush grove; (2) in an overgrown meadow; and (3) in a forest. The erosion plots in the forest were placed on soil with two different slopes: 8° and 21°. The reconnaissance method was used during two years on the plots to determine the amount of soil erosion in each region after an erosive event. The results are shown in Table 1.

**Table 1**

**Erosion Rates**

Unit	Year	Bare soil (blueberry bush)	Overgrown meadow	Forest slope of 8°	Forest slope of 21°
mm/m <sup>2</sup>	2008	5.320	0.09	0.101	0.102
mm/m <sup>2</sup>	2009	7.012	0.10	0.116	0.118

*Study 2*

Scientists repeated experiment 1 using the volumetric method. Reservoirs were built at the point of greatest seepage collection. Runoff was collected and heated to 105°C in the laboratory where the concentration of undissolved particles was determined. The results are shown in Table 2.

**Table 2**

**Erosion Rates**

Unit	Year	Bare soil (blueberry bush)	Overgrown meadow	Forest slope of 8°	Forest slope of 21°
kg/m <sup>2</sup>	2008	8.433	0.102	0.136	0.192
kg/m <sup>2</sup>	2009	10.129	0.064	0.094	0.107

- 19. Based on the data from the studies, which of the following factors makes the greatest contribution to soil retention during erosive events?
  - A. a steep land slope
  - B. a coverage of meadow plants
  - C. bushy plants over bare soil
  - D. a coverage of trees
  
- 20. It was originally hypothesized that increased slope dramatically affects the level of erosion during a rainfall. Do the data support this conclusion?
  - F. Yes, because the forest with a 21° slope suffered the worst soil loss.
  - G. Yes, because the forest with a slope of 21° lost more soil than that of the forest with a slope of 8°.
  - H. No, because the forest with a slope of 21° had only a slightly higher soil loss than the forest with a slope of 8°.
  - J. No, because the greatest soil loss was suffered by the bare soil in the blueberry bush grove.
  
- 21. How much soil was lost in the overgrown meadow in 2008 when the volumetric method was used to measure erosion?
  - A. 804 mm
  - B. 0.102 kg/m<sup>2</sup>
  - C. 0.09 mm/m<sup>2</sup>
  - D. 0.064 kg/m<sup>2</sup>
  
- 22. What was the purpose in heating the seepage samples in Study 2?
  - F. to remove water before weighing
  - G. to purify the soil
  - H. to decrease the weight
  - J. to remove plant debris
  
- 23. According to the data, which type of plant coverage results in the greatest erosion?
  - A. steep forested slopes
  - B. slightly sloped forests
  - C. dense small plant life
  - D. bare soil with occasional bushes

## PASSAGE V

A *titration* is a common laboratory method used to determine the unknown concentration of a known *analyte* (chemical being analyzed). A chemical called the *titrant* is prepared at a known concentration in solution. A measured volume of the titrant is added to a solution of the analyte, and the concentration of the analyte is calculated. A common measurement used in titrations is *pH*, a measure of acidity counted on a 1 to 14 scale. A solution with a pH of 7 is neutral, while solutions with pH values approaching 1 are increasingly more acidic, and solutions with pH values approaching 14 are increasingly more basic. A standard acid-base titration is characterized by a period of gradual pH change (as the titrant is added), followed by a relatively sudden change in pH due to the analyte solution suddenly passing through the pH equilibrium value (generally 7, when the solution is changing from an acid to a base or vice versa), and finally the pH changes gradually again after this equilibrium phase. When a strong base is titrated with weak acids, the equilibrium pH will be higher than a pH of 7.

Figure 1 shows the change in pH as NaOH (sodium hydroxide - a strong base) is added to different weak acids with unknown concentrations.

Note: The equilibrium point in titrations falls half way between where the pH starts to increase drastically and decrease drastically.

Figure 2 shows the effects of having different concentrations of  $\text{NaNO}_3$  (sodium nitrate - a salt) in the analyte in a titration.

Note: The acid being titrated in Figure 2 is an unknown.

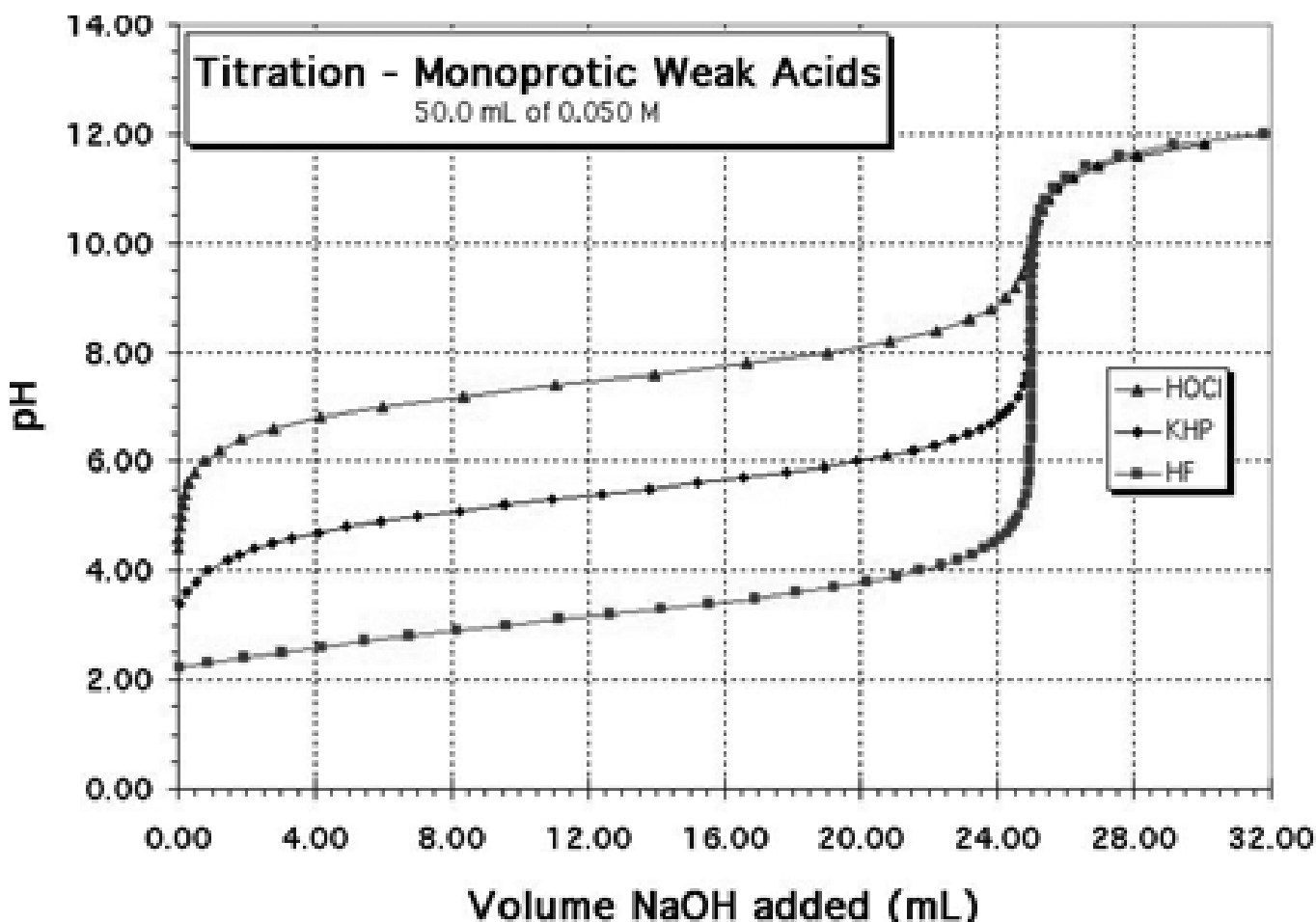


Figure 1

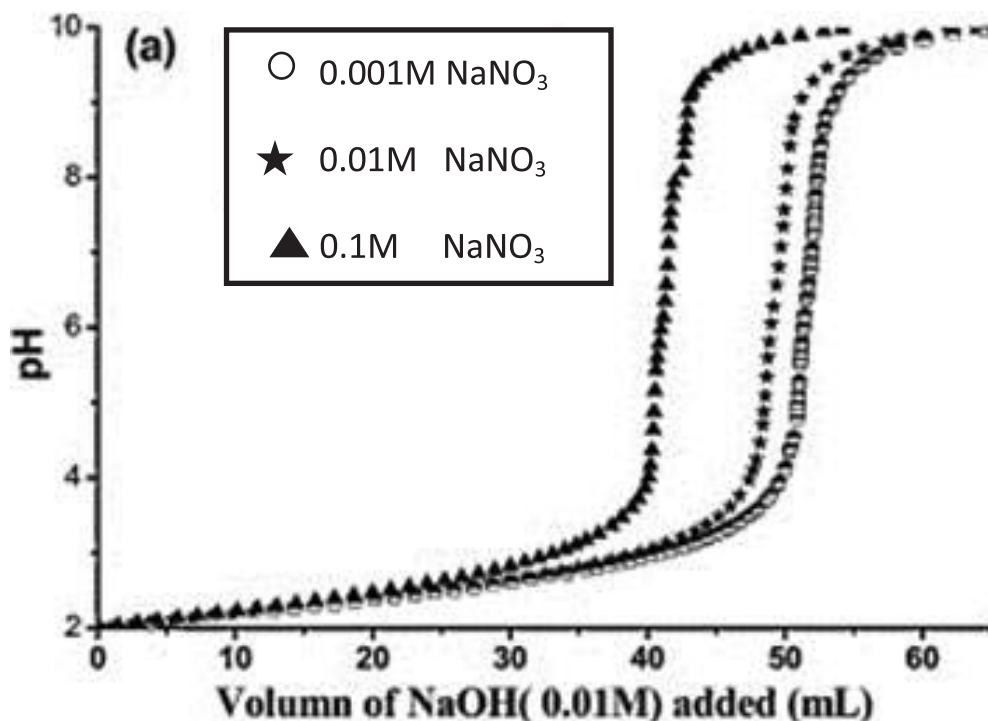


Figure 2

Figure 1 adapted from "Titration of Weak Acid with Strong Base" by St. Olaf College

Figure 2 adapted from "The effect of culture condition and ionic strength on proton absorption at the surface of the extreme thermophile *Acidianus manzaensis*" ©2012 by Elsevier B.V.

24. According to Figure 2, what is the pH of the analyte with 0.1M NaNO<sub>3</sub> after 35 mL of base have been added?
- F. 1.8  
G. 2.4  
H. 3.1  
J. 3.7
25. According to Figure 1, how much NaOH was added before the three acids were at the equilibrium point?
- A. 24.0 mL  
B. 25.5 mL  
C. 27.2 mL  
D. 28.0 mL
26. According to Figure 1, at what pH is HOCl in equilibrium with the NaOH?
- F. 7.02  
G. 8.76  
H. 9.89  
J. 10.41
27. Which is the strongest acid?
- A. NaOH  
B. HOCl  
C. KHP  
D. HF
28. What kind of titrant is used in Figures 1 and 2?
- F. Strong base  
G. Weak base  
H. Weak acid  
J. Strong acid
29. If another test were run following the trend of Figure 2 with a 0.05M concentration of NaNO<sub>3</sub>, how much NaOH would be needed to reach the equilibrium point?
- A. Less than 40 mL  
B. Between 40 mL and 48 mL  
C. Between 48 mL and 52 mL  
D. More than 52 mL

**PASSAGE VI**

A *pendulum* is a weight suspended from a pivot so it can swing freely. When a pendulum begins to swing from its resting equilibrium position, it is subject to a restoring gravitational force that will accelerate it back toward the equilibrium position. When released, the restoring force will cause it to *oscillate* about the equilibrium position, swinging back and forth. The time for one complete cycle, a left swing and a right swing, is known as the period.

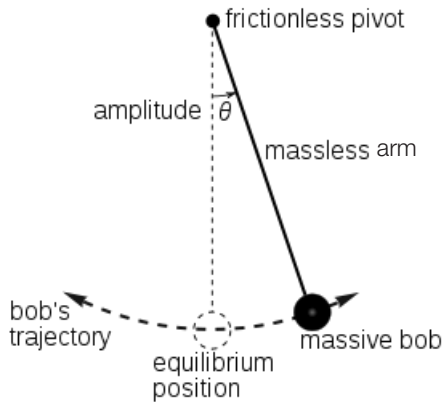


Figure 1

*Experiment 1*

Students placed a weight of 1 kg at the end of the arm in the apparatus depicted above. A starting degree was introduced and the pendulum was left to swing on its own. The students tested differing lengths of arm and measured the period. They recorded their findings in Table 1:

Table 1	
Length of Arm (cm)	Period (s)
10	0.63
20	0.90
30	1.10
40	1.27
50	1.49

*Experiment 2*

Experiment 1 was repeated using arms of only 30 cm. The mass of the bob was varied and the students recorded the period of the bob's swing below:

Table 2	
Mass of Bob	Period (s)
1kg	1.10
2kg	1.10
5kg	1.10
7kg	1.10
11kg	1.10

*Experiment 3*

Researchers from NASA took the students' pendulum and decided to repeat Experiment 1 on Mars, where the acceleration of gravity is  $3.7 \text{ m/s}^2$  -- about 1/3 that of Earth. Their results are recorded below:

Table 3	
Length of Arm (cm)	Period (s)
10	1.03
20	1.46
30	1.79
40	2.06
50	2.31

30. In Experiment 1, students varied which of the following factors?
- F. weight of the bob
  - G. angle of the arm when beginning to swing
  - H. length of the arm
  - J. acceleration of gravity
31. Which of the following conclusions can be drawn from the results of Experiment 1?
- A. The length of the arm has an inverse relationship to the period of the swing: the longer the arm, the shorter the period.
  - B. The length of the arm has a direct relationship to the period of the swing: the longer the arm, the longer the period.
  - C. The length of the arm has no relationship to the period of the swing: the length had no effect on the period.
  - D. The length of the arm has a correlative relationship to the period: each increase in the length of the arm resulted in an identical increase in the period.

32. Which of the following statements best explains why the students varied the mass of the bob in Experiment 2?  
The students wanted to:
- F. study how the mass affects the length of the arm.
  - G. study how the mass affects the length of the period.
  - H. study how the length of the arm affects the mass.
  - J. study how gravity affects the length of the period.
33. The students concluded from the results of Experiment 2 that the mass of the bob had a direct effect on the period of the swing of the pendulum. Are the results of Experiment 2 consistent with this conclusion?
- A. Yes, because there was a measurable period for each bob regardless of mass.
  - B. Yes, because the length of the arm affected the period, therefore the bob would, as well.
  - C. No, because there is no difference in the period despite changes in the mass of the bob.
  - D. No, because the period was measured differently each time the bob's mass was changed.
34. Which of the following factors was NOT directly controlled by the researchers in Experiment 3?
- F. the period of the pendulum
  - G. the gravity acting on the bob
  - H. the mass of the bob
  - J. the length of the arm
35. If Experiment 3 were repeated on Pluto, which has an acceleration of gravity of  $.78 \text{ m/s}^2$ , how would the periods of the pendulum be affected? The periods would be:
- A. longer than recorded in Experiment 3.
  - B. shorter than recorded in Experiment 3.
  - C. the same as recorded in Experiment 3.
  - D. longer when heavier masses are used, and shorter when lighter masses are used.

## PASSAGE VII

*Electronegativity* is defined as the tendency of an atom to attract electrons. The electronegativity of an atom is determined by the amount of charge in the nucleus of an atom as well as the distance between the nucleus and the *valence electrons* (the electrons farthest away from the nucleus in the outermost energy level of the atom). Each energy level is then comprised of electron *subshells* (*s*, *p*, and *d*) that can hold different numbers of electrons and that are characterized by different shapes and configurations in space. As a valence

electron subshell becomes nearly full, the electronegativity of the atom generally increases. Similarly, when the valence electron subshell is about half-full, the atom will not attract electrons as strongly. Elements in the same *family* (shown in the same column on the periodic table) are related to each other. Figure 1 shows the electronegativity values of the atoms that use the first three electron subshells: *s* (holds 2 electrons), *p* (holds 6 electrons), and *d* (holds 10 electrons).

**Partial Periodic Table of Elements**

**Electronegativities**

Alkali Metals												Noble Gases					
Alkali Earths												Halogens					
H 2.20											He n.a.						
Li 0.98	Be 1.57											B 2.04	C 2.55	N 3.04	O 3.44	F 3.98	Ne n.a.
Na 0.93	Mg 1.31											Al 1.61	Si 1.90	P 2.19	S 2.58	Cl 3.16	Ar n.a.
K 0.82	Ca 1.00	Sc 1.36	Ti 1.54	V 1.63	Cr 1.66	Mn 1.55	Fe 1.83	Co 1.88	Ni 1.91	Cu 1.90	Zn 1.65	Ga 1.81	Ge 2.01	As 2.18	Se 2.55	Br 2.96	Kr 3.00
Rb 0.82	Sr 0.95	Y 1.22	Zr 1.33	Nb 1.60	Mo 2.16	Tc 1.90	Ru 2.20	Rh 2.28	Pd 2.20	Ag 1.93	Cd 1.69	In 1.78	Sn 1.96	Sb 2.05	Te 2.10	I 2.66	Xe 2.60
← s →		← d →										← p →					
Electron subshells																	

Figure 1

36. What electron subshell do the valence electrons of Oxygen (O) fit into?
- F. *s*  
G. *p*  
H. *d*  
J. *f*
37. Where on the periodic table will the element with the lowest electronegativity be found?
- A. Upper left  
B. Upper right  
C. Lower left  
D. Lower right





38. Hafnium is in the same family as Titanium (Ti) and Zirconium (Zr). Hafnium is the element in the family located on the level just below the lowest level depicted in Figure 1's Partial Periodic Table of Elements. What is Hafnium's most likely electronegativity?
- F. 0.59
  - G. 1.34
  - H. 1.82
  - J. 2.06
39. Which family on the periodic table generally has the highest electronegativities?
- A. Noble gases
  - B. Halogens
  - C. Alkali earths
  - D. Alkali metals
40. In Figure 1, why do the elements in the 7<sup>th</sup> family (Mn and Tc) have lower electronegativities than the elements to the left and right of them?
- F. The elements of the 7<sup>th</sup> family have 5 electrons in the *d* subshell, halfway filling the *d* subshell.
  - G. The elements of the 7<sup>th</sup> family are more likely to form ionic bonds.
  - H. The elements left and right of the elements of the 7<sup>th</sup> family have larger atomic radii.
  - J. The elements left and right of the elements of the 7<sup>th</sup> family are more magnetic.

# JBP Test 1459C

## Test 1: English—Scoring Key

<u>Key</u>	<u>Key</u>	<u>Key</u>	<u>Key</u>
1. B	21. D	41. B	61. D
2. H	22. H	42. G	62. H
3. D	23. B	43. C	63. C
4. G	24. F	44. G	64. J
5. C	25. D	<u>45. C</u>	65. B
6. F	26. F	46. G	66. J
7. D	27. C	47. C	67. D
8. H	28. G	48. F	68. G
9. B	29. B	49. D	69. B
10. J	<u>30. H</u>	50. G	70. H
11. C	31. D	51. B	71. D
12. J	32. J	52. F	72. H
13. D	33. C	53. D	73. C
14. J	34. G	54. H	74. F
<u>15. D</u>	35. B	55. A	75. B
16. G	36. J	56. J	
17. D	37. D	57. B	
18. G	38. H	58. J	
19. C	39. B	59. C	
20. G	40. F	<u>60. G</u>	

## Test 2: Mathematics—Scoring Key

<u>Key</u>	<u>Key</u>	<u>Key</u>	<u>Key</u>
1. A	16. G	31. E	46. J
2. J	17. C	32. J	47. D
3. D	18. K	33. B	48. K
4. H	19. A	34. H	49. B
5. C	20. G	35. A	50. G
6. H	21. C	36. H	51. B
7. E	22. K	37. D	52. G
8. J	23. E	38. K	53. D
9. E	24. F	39. E	54. H
10. J	25. C	40. H	55. B
11. E	26. H	41. D	56. G
12. G	27. D	42. J	57. E
13. D	28. F	43. B	58. J
14. G	29. D	44. H	59. D
15. D	30. F	45. B	60. H

## Test 3: Reading—Scoring Key

<u>Key</u>	<u>Key</u>	<u>Key</u>	<u>Key</u>
1. C	11. C	21. D	31. B
2. F	12. H	22. G	32. F
3. D	13. D	23. A	33. C
4. H	14. J	24. J	34. J
5. C	15. A	25. C	35. C
6. J	16. J	26. G	36. J
7. A	17. C	27. C	37. A
8. H	18. H	28. F	38. H
9. A	19. A	29. B	39. A
10. H	20. F	30. J	40. J

## Test 4: Science—Scoring Key

<u>Key</u>	<u>Key</u>	<u>Key</u>	<u>Key</u>
1. C	11. D	21. B	31. B
2. F	12. F	22. F	32. G
3. A	<u>13. C</u>	<u>23. D</u>	33. C
4. H	14. G	24. H	34. F
5. B	15. A	25. B	<u>35. A</u>
<u>6. H</u>	16. J	26. J	36. G
7. B	17. C	27. D	37. C
8. H	<u>18. H</u>	28. F	38. F
9. C	19. B	<u>29. B</u>	39. B
10. F	20. H	30. H	40. F

Number Correct (Raw Score) for:	
English	_____ (75)
Mathematics	_____ (60)
Reading	_____ (40)
Science	_____ (40)

Practice ACT Exam	Scale Score (see next page)
English	_____
Mathematics	_____
Reading	_____
Science	_____
Total (sum of all four)	_____
Composite (Total/4)	<input type="text"/>



**Procedures and Conversation Table Used to Obtain Scale Scores from Raw Scores**

On each of the four tests on which you marked any response, the total number of correct responses yields a raw score. Use the table below to convert your raw score to scale scores. For each test, locate and circle your raw score or the range of raw scores that includes it in the table below. Then, read across to either outside column of the table and circle the scale score that corresponds to that raw score. As you determine your scale scores, enter them in the blanks provided on the right of the previous page. The highest possible scale score for each test is 36. The lowest possible scale score for any test on which you marked any responses is 1.

Next, compute the Composite score by averaging the four scale scores. To do this, add your four scores and divide by 4. If the resulting number ends in a fraction, round it off the nearest whole number. (Round down any fraction less than one-half; round up any fraction that is one-half or more.) Enter this number in the blank. This is your composite score. The highest possible Composite score is 36. The lowest possible Composite score is 1.

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

# JBP Test 1459C

## Practice ACT Assessment Answer Sheet

---

---

### ENGLISH

- |                    |                    |                    |                    |                    |                    |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 1 (A) (B) (C) (D)  | 14 (F) (G) (H) (J) | 27 (A) (B) (C) (D) | 40 (F) (G) (H) (J) | 53 (A) (B) (C) (D) | 66 (F) (G) (H) (J) |
| 2 (F) (G) (H) (J)  | 15 (A) (B) (C) (D) | 28 (F) (G) (H) (J) | 41 (A) (B) (C) (D) | 54 (F) (G) (H) (J) | 67 (A) (B) (C) (D) |
| 3 (A) (B) (C) (D)  | 16 (F) (G) (H) (J) | 29 (A) (B) (C) (D) | 42 (F) (G) (H) (J) | 55 (A) (B) (C) (D) | 68 (F) (G) (H) (J) |
| 4 (F) (G) (H) (J)  | 17 (A) (B) (C) (D) | 30 (F) (G) (H) (J) | 43 (A) (B) (C) (D) | 56 (F) (G) (H) (J) | 69 (A) (B) (C) (D) |
| 5 (A) (B) (C) (D)  | 18 (F) (G) (H) (J) | 31 (A) (B) (C) (D) | 44 (F) (G) (H) (J) | 57 (A) (B) (C) (D) | 70 (F) (G) (H) (J) |
| 6 (F) (G) (H) (J)  | 19 (A) (B) (C) (D) | 32 (F) (G) (H) (J) | 45 (A) (B) (C) (D) | 58 (F) (G) (H) (J) | 71 (A) (B) (C) (D) |
| 7 (A) (B) (C) (D)  | 20 (F) (G) (H) (J) | 33 (A) (B) (C) (D) | 46 (F) (G) (H) (J) | 59 (A) (B) (C) (D) | 72 (F) (G) (H) (J) |
| 8 (F) (G) (H) (J)  | 21 (A) (B) (C) (D) | 34 (F) (G) (H) (J) | 47 (A) (B) (C) (D) | 60 (F) (G) (H) (J) | 73 (A) (B) (C) (D) |
| 9 (A) (B) (C) (D)  | 22 (F) (G) (H) (J) | 35 (A) (B) (C) (D) | 48 (F) (G) (H) (J) | 61 (A) (B) (C) (D) | 74 (F) (G) (H) (J) |
| 10 (F) (G) (H) (J) | 23 (A) (B) (C) (D) | 36 (F) (G) (H) (J) | 49 (A) (B) (C) (D) | 62 (F) (G) (H) (J) | 75 (A) (B) (C) (D) |
| 11 (A) (B) (C) (D) | 24 (F) (G) (H) (J) | 37 (A) (B) (C) (D) | 50 (F) (G) (H) (J) | 63 (A) (B) (C) (D) |                    |
| 12 (F) (G) (H) (J) | 25 (A) (B) (C) (D) | 38 (F) (G) (H) (J) | 51 (A) (B) (C) (D) | 64 (F) (G) (H) (J) |                    |
| 13 (A) (B) (C) (D) | 26 (F) (G) (H) (J) | 39 (A) (B) (C) (D) | 52 (F) (G) (H) (J) | 65 (A) (B) (C) (D) |                    |

---

---

### MATHEMATICS

- |                        |                        |                        |                        |                        |                        |
|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| 1 (A) (B) (C) (D) (E)  | 11 (A) (B) (C) (D) (E) | 21 (A) (B) (C) (D) (E) | 31 (A) (B) (C) (D) (E) | 41 (A) (B) (C) (D) (E) | 51 (A) (B) (C) (D) (E) |
| 2 (F) (G) (H) (J) (K)  | 12 (F) (G) (H) (J) (K) | 22 (F) (G) (H) (J) (K) | 32 (F) (G) (H) (J) (K) | 42 (F) (G) (H) (J) (K) | 52 (F) (G) (H) (J) (K) |
| 3 (A) (B) (C) (D) (E)  | 13 (A) (B) (C) (D) (E) | 23 (A) (B) (C) (D) (E) | 33 (A) (B) (C) (D) (E) | 43 (A) (B) (C) (D) (E) | 53 (A) (B) (C) (D) (E) |
| 4 (F) (G) (H) (J) (K)  | 14 (F) (G) (H) (J) (K) | 24 (F) (G) (H) (J) (K) | 34 (F) (G) (H) (J) (K) | 44 (F) (G) (H) (J) (K) | 54 (F) (G) (H) (J) (K) |
| 5 (A) (B) (C) (D) (E)  | 15 (A) (B) (C) (D) (E) | 25 (A) (B) (C) (D) (E) | 35 (A) (B) (C) (D) (E) | 45 (A) (B) (C) (D) (E) | 55 (A) (B) (C) (D) (E) |
| 6 (F) (G) (H) (J) (K)  | 16 (F) (G) (H) (J) (K) | 26 (F) (G) (H) (J) (K) | 36 (F) (G) (H) (J) (K) | 46 (F) (G) (H) (J) (K) | 56 (F) (G) (H) (J) (K) |
| 7 (A) (B) (C) (D) (E)  | 17 (A) (B) (C) (D) (E) | 27 (A) (B) (C) (D) (E) | 37 (A) (B) (C) (D) (E) | 47 (A) (B) (C) (D) (E) | 57 (A) (B) (C) (D) (E) |
| 8 (F) (G) (H) (J) (K)  | 18 (F) (G) (H) (J) (K) | 28 (F) (G) (H) (J) (K) | 38 (F) (G) (H) (J) (K) | 48 (F) (G) (H) (J) (K) | 58 (F) (G) (H) (J) (K) |
| 9 (A) (B) (C) (D) (E)  | 19 (A) (B) (C) (D) (E) | 29 (A) (B) (C) (D) (E) | 39 (A) (B) (C) (D) (E) | 49 (A) (B) (C) (D) (E) | 59 (A) (B) (C) (D) (E) |
| 10 (F) (G) (H) (J) (K) | 20 (F) (G) (H) (J) (K) | 30 (F) (G) (H) (J) (K) | 40 (F) (G) (H) (J) (K) | 50 (F) (G) (H) (J) (K) | 60 (F) (G) (H) (J) (K) |

---

---

### READING

- |                   |                    |                    |                    |                    |                    |
|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 1 (A) (B) (C) (D) | 8 (F) (G) (H) (J)  | 15 (A) (B) (C) (D) | 22 (F) (G) (H) (J) | 29 (A) (B) (C) (D) | 36 (F) (G) (H) (J) |
| 2 (F) (G) (H) (J) | 9 (A) (B) (C) (D)  | 16 (F) (G) (H) (J) | 23 (A) (B) (C) (D) | 30 (F) (G) (H) (J) | 37 (A) (B) (C) (D) |
| 3 (A) (B) (C) (D) | 10 (F) (G) (H) (J) | 17 (A) (B) (C) (D) | 24 (F) (G) (H) (J) | 31 (A) (B) (C) (D) | 38 (F) (G) (H) (J) |
| 4 (F) (G) (H) (J) | 11 (A) (B) (C) (D) | 18 (F) (G) (H) (J) | 25 (A) (B) (C) (D) | 32 (F) (G) (H) (J) | 39 (A) (B) (C) (D) |
| 5 (A) (B) (C) (D) | 12 (F) (G) (H) (J) | 19 (A) (B) (C) (D) | 26 (F) (G) (H) (J) | 33 (A) (B) (C) (D) | 40 (F) (G) (H) (J) |
| 6 (F) (G) (H) (J) | 13 (A) (B) (C) (D) | 20 (F) (G) (H) (J) | 27 (A) (B) (C) (D) | 34 (F) (G) (H) (J) |                    |
| 7 (A) (B) (C) (D) | 14 (F) (G) (H) (J) | 21 (A) (B) (C) (D) | 28 (F) (G) (H) (J) | 35 (A) (B) (C) (D) |                    |

---

---

### SCIENCE

- |                   |                    |                    |                    |                    |                    |
|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 1 (A) (B) (C) (D) | 8 (F) (G) (H) (J)  | 15 (A) (B) (C) (D) | 22 (F) (G) (H) (J) | 29 (A) (B) (C) (D) | 36 (F) (G) (H) (J) |
| 2 (F) (G) (H) (J) | 9 (A) (B) (C) (D)  | 16 (F) (G) (H) (J) | 23 (A) (B) (C) (D) | 30 (F) (G) (H) (J) | 37 (A) (B) (C) (D) |
| 3 (A) (B) (C) (D) | 10 (F) (G) (H) (J) | 17 (A) (B) (C) (D) | 24 (F) (G) (H) (J) | 31 (A) (B) (C) (D) | 38 (F) (G) (H) (J) |
| 4 (F) (G) (H) (J) | 11 (A) (B) (C) (D) | 18 (F) (G) (H) (J) | 25 (A) (B) (C) (D) | 32 (F) (G) (H) (J) | 39 (A) (B) (C) (D) |
| 5 (A) (B) (C) (D) | 12 (F) (G) (H) (J) | 19 (A) (B) (C) (D) | 26 (F) (G) (H) (J) | 33 (A) (B) (C) (D) | 40 (F) (G) (H) (J) |
| 6 (F) (G) (H) (J) | 13 (A) (B) (C) (D) | 20 (F) (G) (H) (J) | 27 (A) (B) (C) (D) | 34 (F) (G) (H) (J) |                    |
| 7 (A) (B) (C) (D) | 14 (F) (G) (H) (J) | 21 (A) (B) (C) (D) | 28 (F) (G) (H) (J) | 35 (A) (B) (C) (D) |                    |