

# **FULL-LENGTH PRACTICE TESTS 12**

# *English Test*

**TIME:** 35 minutes for 50 questions

**DIRECTIONS:** Following are five passages with underlined portions. Alternate ways of stating the underlined portions come after the passages. Choose the best alternative; if the original is the best way of stating the underlined portion, choose NO CHANGE.

The test also has questions that refer to the passages or ask you to reorder the sentences within the passages. These questions are identified by a number in a box. Choose the best answer, and shade in the corresponding oval on your answer sheet.

## **Passage 1**

---

### **Hockey Season**

The coolness of the ice rink and the hum of the Zamboni means only one thing; it's hockey time! All signs pointing toward a successful season for the Clement Cougars.

Clement's hockey team is not just made up of Clement players. Rounding out the team are players from St. Thomas High School and Our Lady High School, too. Though three schools are represented; the vast majority of the players are from Clement.

Here's a little bit about the players from Clement. Returning to Clement for his senior year, the position of goalie is played by Brendan Sanchez. For the past two years Brendan has been playing hockey in a special league in Washington State. Sanchez's unmatched skills will be an excellent addition to an already great Clement team. Sanchez is surrounded by a great supporting cast that includes such star players as Clement center, Taylor Poldale, St. Thomas senior, Don Silver, Our Lady senior, Nick Woodson, and Clement junior, Justin Frank. Look for the

upperclassmen, to step up and take over the roles  
<sup>9</sup>  
vacated by graduated players, Brad Hunt and Steve  
Wilson. **10**

[1] Some of the players, like Sanchez, have  
been preparing for the rigorous season by joining  
fall hockey teams. Him and Poldale are currently  
<sup>11</sup>  
playing for local AA league teams. [2] It is hoped  
that this extra practice will give the team the edge  
<sup>12</sup>  
to overcome its rival, Apple River High School. [3]  
Last year, the Clement Cougars won nine games  
and lost five and played good enough to make the  
<sup>13</sup>  
playoffs. [4] The Cougars hope to rebound this  
season and take home the state championship. [5]  
Unfortunately, they were dealt a devastating two  
to one loss in the final seconds at the hands of  
Coach Jim Quinlan and the Apple River team. **14**

This year will be an exciting one. So grab your  
jackets, buy your tickets, and come support the  
Cougars on their way to high school hockey  
stardom. **15**

1. **(A)** NO CHANGE  
**(B)** Zamboni only means  
**(C)** Zamboni mean only  
**(D)** Zamboni, means only
  
2. **(F)** NO CHANGE  
**(G)** thing; its hockey  
**(H)** thing. Its hockey  
**(J)** thing, it's hockey
  
3. **(A)** NO CHANGE

- (B) All signs points toward a successful season  
(C) All signs point toward a successful season  
(D) All signs have pointed toward a successful season
4. (F) NO CHANGE  
(G) are not just made up of  
(H) isn't just made up of  
(J) isn't made up of just
5. (A)NO CHANGE  
(B) are represented, the  
(C) are represented: the  
(D) were represented the
6. Which of the following would be the best way to introduce the paragraph?  
(F) NO CHANGE  
(G) The team has many players.  
(H) Some of the team is the same as last year.  
(J) DELETE the underlined portion.
7. (A)NO CHANGE  
(B) year, the goalie position made up of Brendan Sanchez.  
(C) year, Brendan Sanchez plays goalie.  
(D) year; Brendan Sanchez plays the position of goalie.
8. (F) NO CHANGE  
(G) as: Clement center Taylor Poldale, St. Thomas senior Don Silver, Our Lady senior Nick Woodson, and Clement junior Justin Frank  
(H) as Clement center: Taylor Poldale, St. Thomas senior: Don Silver, Our Lady senior: Nick Woodson, and Clement junior: Justin Frank

**(J)** as, Clement center, Taylor Poldale, St. Thomas senior, Don Silver, Our Lady senior, Nick Woodson, and Clement junior, Justin Frank

9. **(A)** NO CHANGE

**(B)** the upperclassmen to step up

**(C)** the upperclassmen, to take over

**(D)** the upperclassmen to step up and take over

10. At this point in the story, the author is considering including a list of the entire team roster. Would it be appropriate to include that list here?

**(F)** Yes, because the primary purpose of the essay is to let the reader know who is on the hockey team.

**(G)** Yes, because providing a list of players would make the essay more interesting.

**(H)** No, because putting a complete list of players in the middle of the essay would interrupt its flow and interfere with its focus.

**(J)** No, because the focus of the essay is how the hockey team performed last year, so knowing this year's roster is irrelevant.

11. **(A)** NO CHANGE

**(B)** Poldale and him

**(C)** Him, and Poldale,

**(D)** He and Poldale

12. **(F)** NO CHANGE

**(G)** Hopefully, this extra practice

**(H)** This extra practice, hopefully,

**(J)** Everyone is hopeful that with this extra practice

13. **(A)** NO CHANGE

**(B)** five games and played sufficiently good enough

- (C) five and played well enough
- (D) five games, and then played sufficiently well enough

14. The most logical position for Sentence 4 is:

- (F) where it is now.
- (G) after Sentence 5.
- (H) after Sentence 2.
- (J) before Sentence 1.

15. This article was written in response to an assignment to provide an article for the high school newspaper that would entice students to attend hockey games. Did the writer fulfill the assignment?

- (A) Yes, because the essay is written in a casual, enthusiastic style that promotes the excitement of following the hockey team's season.
- (B) Yes, because the essay provides detailed information about all of the players so that readers will get to know them better.
- (C) No, because the essay focuses too much on the disappointing season the team experienced the year before.
- (D) No, because the essay is written in a style and uses language that is too formal for a high school newspaper.

## Passage 2

---

### Promoting Easy Recycling

It is commonly agreed that recycling being a<sup>16</sup>  
critical step, in both maintaining a clean and<sup>17</sup>  
green environment and sustaining America's quest  
for autonomous independence. The secondary  
markets for recycled paper, cardboard, aluminum,<sup>18</sup>  
asphalt, copper, plastic, and glass are at all-time<sup>19</sup>  
highs and have never been greater. Public educa-  
tion regarding the moral and ethical responsibili-<sup>20</sup>  
ties to keep the environment clean has increased.  
21 Their is now a large supply and an increasingly<sup>22</sup>  
strong demand for recycled goods. But we still  
have problems in one area; the ability to collect  
and sort recyclables.<sup>23</sup>

[1] Recycle bins have seemingly become depositories for strictly any type of trash, recyclable or not from a tattered mattress and last <sup>25</sup> weeks' TV dinner. [2] The recycle bins that news-<sub>26</sub> paper publishers, grocery stores, and big box <sub>24</sub> department stores have traditionally placed in their parking lots have become trash magnets that produce increasingly determined complaints from patrons and neighbors. [3] Part of the reason that the stores are so willing to remove the bins is because of the significant expense involved in having to separate trash from newsprint and other recyclables, including aluminum, cardboard, plastic, and glass. [4] Neighbors frequently ask stores to remove their recycle bins largely because they become displeasing to the eye and unsightly. <sup>28</sup><sub>27</sub>

One solution to the problem has come from entrepreneurs who has begun charging for <sup>29</sup> monthly pick-ups of recyclable materials, like paper, aluminum, plastic, and glass, from customers' curbsides. The monthly fee for this service usually pays for the costs incident to collection and separation of the materials. Additionally, these businesses sell the materials for a profit on the secondary recyclable market after they separate them. This practice is generally viewed as a "win-win" situation for the businesses and their contented customers, who have to pay only a small fee to contribute toward a cleaner, more energy-independent America. <sup>30</sup>

16. (F) NO CHANGE  
(G) could have been  
(H) had been

(J) is

17. (A) NO CHANGE

(B) step in both maintaining

(C) step, in maintaining both

(D) step, both in maintaining

18. (F) NO CHANGE

(G) autonomously

(H) autonomous,

(J) DELETE the underlined portion.

19. (A) NO CHANGE

(B) recycled paper; cardboard; aluminum; asphalt; copper; plastic;

(C) recycled paper: cardboard and aluminum, asphalt, copper, plastic,

(D) recycled paper and cardboard and aluminum, asphalt, copper,  
plastic

20. (F) NO CHANGE

(G) are at all-time highs

(H) have never been greater and are at all-time highs

(J) have never been at such an all-time high

21. At this point, the author wants to add this sentence about recycling education:

While the increase in public education has inspired people to partake in recycling programs, many only do so for a short period of time before reverting to old habits.

Should the author insert this addition?

(A) No, because the insertion breaks up an existing cause-and-effect relationship in the paragraph.

- (B) No, because the sentence brings up a topic that is completely different from information covered in the rest of the paragraph.
- (C) Yes, because the insertion provides information that is necessary to understand the relationship between public education and increased recycling practices.
- (D) Yes, because the sentence adds interesting information about human nature.

22. (F) NO CHANGE

- (G) There is now a large
- (H) There's now a super huge
- (J) Theirs is now a large

23. (A) NO CHANGE

- (B) in one area: the ability to collect and sort recyclables.
- (C) in one area. The ability to collect and sort recyclables.
- (D) in one area which is the ability to collect and sort recyclables.

24. (F) NO CHANGE

- (G) rigorously
- (H) mainly
- (J) virtually

25. (A) NO CHANGE

- (B) trash, recyclable or not,
- (C) trash recyclable or not,
- (D) trash, recyclable, or not,

26. (F) NO CHANGE

- (G) to last week's TV
- (H) and last weeks TV
- (J) to last weeks' television

27. (A) NO CHANGE  
(B) unsightly and displeasing to the eye  
(C) unsightly  
(D) displeasingly unsightly
28. The most logical and coherent placement for Sentence 4 is:  
(F) where it is now.  
(G) before Sentence 1.  
(H) before Sentence 3.  
(J) at the beginning of the next paragraph.
29. (A) NO CHANGE  
(B) whose begun  
(C) they have begun  
(D) who have begun
30. Given that all of the following sentences are true, which one would most effectively conclude this passage?  
(F) As more people enroll in these recycle programs, the country will become much closer to achieving a greener and more sustainable future.  
(G) More public education would only help further America's sustainability goals.  
(H) If neighbors would stop complaining about recycle bins' being eyesores, the greater public would benefit as a result.  
(J) If more big businesses would step up their game, more small businesses would be likely to follow suit.

### Passage 3

---

### The Bill of Rights

The first amendment to the United States Constitution provides that "Congress shall make <sup>31</sup> no law respecting or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press, or the right of the people peaceably to

assemble, and to petition the Government for a redress of grievances.” Constituting the Bill of Rights are ten amendments, nine others and this one in the Constitution.<sup>32</sup> The Bill of Rights does protect more than thirty liberties and rights. The Fourteenth Amendment made most of the Bill of Rights applicable to the states, through a process called incorporation.<sup>34</sup>

Originating the Bill of Rights are the English Magna Carta of 1215, the English Bill of Rights of 1689, various other English precedents and acts, and the experience of people in England and America. Once the Bill of Rights was ratified by three-fourths of the fourteen states, virtually all opposition to the U.S. Constitution quickly disappeared.<sup>35</sup>

[1] The effect of the Bill of Rights are deeply embedded in our daily lives.<sup>37</sup> [2] For example, the Bill of Rights by prohibiting most attempts to censor certain types of art or music.<sup>38</sup> [3] It also protects speech, which means you can pretty much say whatever you want about a government official in the editorial section of a newspaper or in a blog on the Internet.<sup>39</sup> [4] The Bill of Rights protects our often heated debates on abortion, and school prayer, and the death penalty.<sup>41</sup> [5] And the speech you hear police officers give on TV shows when they tell someone who has been arrested that he has “the right to remain silent” is also a Bill of Rights issue.<sup>42</sup> [6] This practice is known as reading someone the Miranda rights.<sup>43</sup> [7] The first amendment protection of the rights of extremist groups to peacefully assemble means that any

group can stage a protest as long as they are not  
violent. [8] By protecting the civil liberties of even  
<sup>44</sup>  
extreme groups the police and courts seek to  
preserve the right to freedom of expression for all  
Americans. [5]

31. (A) NO CHANGE

(B) that provides

(C) that says

(D) provides, that,

32. (F) NO CHANGE

(G) Constituting the Bill of Rights are ten amendments: nine others  
and this one in the Constitution.

(H) This amendment and nine others constitute the Bill of Rights,  
which is comprised of the first ten amendments to our Constitution.

(J) Constituting the Bill of Rights are ten amendments; nine others  
and this one in the Constitution.

33. (A) NO CHANGE

(B) Rights does protect more than thirty liberty's and rights

(C) Rights protects more than thirty liberties and rights

(D) Rights, which does protect more than thirty liberties and rights

34. (F) NO CHANGE

(G) states through a process called incorporation.

(H) states; through a process called incorporation.

(J) states: through a process called incorporation.

35. (A) NO CHANGE

(B) The Bill of Rights originate in

(C) The Bill of Rights that originate from

(D) The origins of the Bill of Rights include

36. All of the following would be an acceptable alternative to the underlined portion EXCEPT:
- (F) When
  - (G) As soon as
  - (H) While
  - (J) After
37. (A)NO CHANGE
- (B) The affect of the Bill of Rights are deeply embedded
  - (C) The effects of the Bill of Rights is embedded deep
  - (D) The effects of the Bill of Rights are deeply embedded
38. (F) NO CHANGE
- (G) prohibits
  - (H) prohibit
  - (J) that prohibits
39. (A)NO CHANGE
- (B) speech, that means
  - (C) speech that means
  - (D) speech. Which means
40. The author is considering deleting Sentence 3. Without this sentence, the paragraph would primarily lack:
- (F) an irrelevant point.
  - (G) an example of how the Bill of Rights protects freedom of speech in the daily lives of Americans.
  - (H) a thorough explanation of the concept of Freedom of Speech.
  - (J) its main idea.
41. (A)NO CHANGE
- (B) abortion, school, prayer, and the death penalty.

- (C) abortion and school prayer, and the death penalty.
- (D) abortion, school prayer, and the death penalty.

42. (F) NO CHANGE

- (G) The speech you hear
- (H) Hearing the speech
- (J) But the speech you hear

43. The author is considering including in Sentence 5 the full text of the Miranda speech rather than the short quote provided. Should the author make this change?

- (A) No, because current television shows do not contain as many instances of police officers reading the Miranda rights as past television programs have.
- (B) No, because the paragraph provides practical examples of more than just one right.
- (C) Yes, because it is difficult to grasp the content of the Miranda rights speech from the short quote provided.
- (D) Yes, because the full text of the speech would provide readers with a better understanding of the pervasiveness of the Bill of Rights in daily life.

44. (F) NO CHANGE

- (G) provided that they are not violent.
- (H) as long as they are nonviolent.
- (J) as long as it is not violent.

45. Suppose the writer had intended to write an essay that thoroughly details the freedoms granted to Americans by the Bill of Rights. Would this essay successfully fulfill the writer's goal?

- (A) Yes, because the author offers real life examples that exemplify how the Bill of Rights apply to daily life.

- (B) Yes, because in explaining its origins, the author implies that the Bill of Rights gives Americans all of the freedoms provided for by various other English precedents and acts.
- (C) No, because the essay fails to include an explanation of the Right to Bear Arms.
- (D) No, because the author describes some freedoms in detail but doesn't deal with all components of the Bill of Rights.

#### **Passage 4**

---

#### **Jackson's Relationship with the Cherokee**

[1] Andrew Jackson <sup>46</sup> President signed the Indian Removal Act in 1830, which appropriated <sup>47</sup> \$500,000 for the U.S. military to force <sup>48</sup> the Cherokee tribes to march from their homes in Florida and southern Georgia to Oklahoma. 49 [2] In 1832, the Native Americans, who won a victory supported <sup>50</sup> by most Northern leaders in the U.S. Supreme Court case of *Worcester v. Georgia*. The decision held that Native American nations were independent and not subject to state regulation. [3] However, after the case decision, <sup>51</sup> President Jackson, provoking, asserted that Chief Justice John Marshall, the longest serving Chief <sup>52</sup> Justice in Supreme Court history, had made his decision and <sup>53</sup> “now let’s see him enforce it.” [4] Although Jackson professed to having what he <sup>54</sup> called the kindest feelings, his actions and subsequent statements belied his words toward the <sup>55</sup> Cherokees. <sup>56</sup>

In 1835, Jackson entered into treaty negotiations with the Cherokee, that ended up in the <sup>57</sup> relinquishment of all of their land east of the Mississippi River. Jackson gave the Cherokees until <sup>58</sup> 1838 to leave the area. Some left voluntarily, but <sup>59</sup> most did not. Those who remained were forced by the U.S. military to walk the 1,200 mile “Trail of Tears” from Georgia to lands in Oklahoma, usually with only the clothes they were wearing. The brutal journey in 1838 to 1839 resulted in the deaths of about one-fourth of the Cherokee population from disease, starvation, exposure, and exhaustion. 60

46. (F) NO CHANGE

(G) President Andrew Jackson

(H) Andrew Jackson, President

(J) Andrew Jackson, who was president,

47. (A) NO CHANGE

(B) that appropriated

(C) which is appropriating

(D) that is appropriating

48. All of the following would be an acceptable alternative to the underlined portion EXCEPT:

(F) coerce

(G) command

(H) help

(J) compel

49. The author is considering placing a period after 1830 in Sentence 1 and deleting the rest of the sentence. If the author did this, the paragraph would primarily lose:

(A) detail about an act that is unrelated to the rest of the information in the passage.

(B) descriptive detail that provides background information that is key to understanding the struggle set forth in the remainder of the passage.

(C) irrelevant details that are repeated later in the paragraph.

(D) information that contradicts the notion later in the passage that Jackson might not have had the best intentions of the Cherokees at heart.

50. (F) NO CHANGE

(G) the Native Americans, winners of

(H) the winning Native Americans

(J) the Native Americans won

# *Mathematics Test*

**TIME:** 50 minutes for 45 questions

**DIRECTIONS:** Each question has four answer choices. Choose the best answer for each question and shade the corresponding oval on

1. What is the value of  $4x - 7$  when  $x = 6$ ?

- A. 10
- B. 15
- C. 17
- D. 24

2. If  $5y + 12 = 37$ , then  $y = ?$

- F. 4
- G. 5
- H. 6
- J. 7

3. What is 15% of 200?

- A. 30
- B. 20
- C. 35
- D. 25

4. Which of the following is equivalent to  $6(x + 4)$ ?

- F.  $6x + 4$
- G.  $x + 24$
- H.  $6x + 24$
- J.  $6x + 10$

5. If a shirt costs \$48 after a 20% discount, what was the original price?

- A. \$57.60
- B. \$58
- C. \$50
- D. \$60

6. What is the slope of a line passing through points (1, 3) and (5, 11)?

- F. 2
- G. 3
- H. 4
- J. 8

7. If  $f(x) = 3x^2 - 2x + 5$ , what is  $f(2)$ ?

- A. 11
- B. 13
- C. 15
- D. 17

8. What is the value of  $|-15 + 6|$ ?

- F. -9
- G. -21
- H. 21
- J. 9

9. A rectangle has a length of 14 inches and a width of 9 inches. What is its area?

- A. 23 in<sup>2</sup>
- B. 46 in<sup>2</sup>
- C. 126 in<sup>2</sup>
- D. 252 in<sup>2</sup>

10. If  $4x - 3 = 2x + 11$ , then  $x = ?$

F. 4

G. 7

H. 8

J. 14

11. What is the circumference of a circle with diameter 16 cm? (Use  $\pi \approx 3.14$ )

A. 50.24 cm

B. 25.12 cm

C. 100.48 cm

D. 200.96 cm

12. Which of the following is a solution to  $x^2 - 5x - 14 = 0$ ?

F. 2

G. -2

H. 7

J. 5

13. In a bag of 50 candies, 20 are red, 15 are blue, and 15 are green. What percent are red?

A. 20%

B. 30%

C. 35%

D. 40%

14. What is the distance between points (2, 8) and (2, -5) in the coordinate plane?

F. 13

G. 10

H. 6

J. 3

15. If  $\frac{3}{5}$  of a number is 45, what is the number?

- A. 27
- B. 75
- C. 90
- D. 135

16. What is the value of  $2^5$ ?

- F. 10
- G. 25
- H. 16
- J. 32

17. If the sum of four consecutive even integers is 84, what is the smallest of these integers?

- A. 18
- B. 19
- C. 18
- D. 20

18. Which of the following is equivalent to  $(x - 7)(x + 3)$ ?

- F.  $x^2 - 4x - 21$
- G.  $x^2 - 4x - 21$
- H.  $x^2 + 10x - 21$
- J.  $x^2 - 10x + 21$

19. What is the perimeter of a square with side length 12.5 cm?

- A. 50 cm
- B. 25 cm
- C. 156.25 cm
- D. 62.5 cm

20. If  $y$  varies inversely with  $x$ , and  $y = 8$  when  $x = 3$ , what is  $y$  when  $x = 6$ ?

- F. 16
- G. 12
- H. 4
- J. 2

21. What is the median of the set: 14, 9, 22, 18, 11, 15, 20?

- A. 14
- B. 15
- C. 18
- D. 15

22. If  $\log_2(x) = 6$ , then  $x = ?$

- F. 64
- G. 12
- H. 32
- J. 128

23. What is the value of  $\sqrt{144} + \sqrt{64}$ ?

- A. 20
- B. 20
- C.  $\sqrt{208}$
- D. 16

24. A box contains 8 red balls, 5 blue balls, and 7 green balls. What is the probability of randomly selecting a green ball?

- F.  $\frac{7}{20}$
- G.  $\frac{1}{3}$
- H.  $\frac{7}{13}$
- J.  $\frac{7}{20}$

25. If  $\cos(\theta) = 0.8$  and  $\theta$  is an acute angle, what is  $\sin(\theta)$ ?

- A. 0.2
- B. 0.4
- C. 0.6
- D. 1.0

26. What is the solution set for the inequality  $2x + 5 \leq 17$ ?

- F.  $x \leq 11$
- G.  $x \leq 6$
- H.  $x \geq 6$
- J.  $x \leq 22$

27. If a triangle has sides of length 5, 12, and 13, what is its area?

- A. 30
- B. 60
- C. 32.5
- D. 65

28. What is the value of  $(3x + 2)^2$  when  $x = 4$ ?

- F. 144
- G. 169
- H. 196
- J. 225

29. The sum of the interior angles of a hexagon is:

- A.  $540^\circ$
- B.  $720^\circ$
- C.  $900^\circ$
- D.  $720^\circ$

30. If  $3^{(x+1)} = 27$ , what is the value of  $x$ ?

- F. 2
- G. 3
- H. 8
- J. 9

31. Which of the following is equivalent to  $\sqrt{72}$ ?

- A.  $9\sqrt{2}$
- B.  $6\sqrt{2}$
- C.  $8\sqrt{3}$
- D.  $12\sqrt{6}$

32. In a sequence, the first term is 7 and each subsequent term is 4 more than the previous term. What is the 10th term?

- F. 40
- G. 43
- H. 44
- J. 43

33. If matrix  $A = \begin{bmatrix} 4 & 3 \\ 2 & 5 \end{bmatrix}$  and matrix  $B = \begin{bmatrix} 1 & 2 \\ 3 & 1 \end{bmatrix}$ , what is  $A - B$ ?

- A.  $\begin{bmatrix} 3 & 1 \\ -1 & 4 \end{bmatrix}$
- B.  $\begin{bmatrix} 5 & 5 \\ 5 & 6 \end{bmatrix}$
- C.  $\begin{bmatrix} 3 & 1 \\ -1 & 4 \end{bmatrix}$
- D.  $\begin{bmatrix} 3 & 5 \\ -1 & 6 \end{bmatrix}$

34. A cylinder has a radius of 5 cm and a height of 12 cm. What is its volume? (Use  $\pi \approx 3.14$ )

- F.  $314 \text{ cm}^3$
- G.  $942 \text{ cm}^3$
- H.  $471 \text{ cm}^3$
- J.  $188.4 \text{ cm}^3$

35. What is the value of  $5!$  (5 factorial)?

- A. 120
- B. 25
- C. 100
- D. 60

36. For which value of  $x$  is the expression  $(x + 2)/(x^2 - 4)$  undefined?

- F.  $x = 0$
- G.  $x = 4$
- H.  $x = 2$  or  $x = -2$
- J.  $x = -4$

37. If the angles of a quadrilateral are in the ratio 1:2:3:4, what is the measure of the largest angle?

- A.  $36^\circ$
- B.  $72^\circ$
- C.  $108^\circ$
- D.  $144^\circ$

38. What is the range of the function  $f(x) = -x^2 + 3$  for all real numbers  $x$ ?

- F.  $y \leq 3$
- G.  $y \geq 3$
- H.  $y < 3$
- J. All real numbers

39. If  $4^{(2x)} = 256$ , what is the value of  $x$ ?

- A. 4
- B. 2
- C. 8
- D. 16

40. A cone has a base radius of 7 cm and a slant height of 25 cm. If the height is 24 cm, what is its volume? (Use  $\pi \approx 3.14$ )

F. 1,230.88 cm<sup>3</sup>

G. 2,461.76 cm<sup>3</sup>

H. 4,108.8 cm<sup>3</sup>

J. 1,230.88 cm<sup>3</sup>

41. What is the greatest common factor (GCF) of 48 and 72?

A. 12

B. 16

C. 24

D. 36

42. If  $f(x) = 2x + 5$  and  $g(x) = x^2 - 1$ , what is  $g(f(3))$ ?

F. 100

G. 120

H. 80

J. 110

43. The arithmetic mean of five numbers is 24. If four of the numbers are 18, 22, 26, and 30, what is the fifth number?

A. 24

B. 20

C. 28

D. 22

44. In a right triangle, if one angle measures  $35^\circ$ , what is the measure of the other acute angle?

F.  $35^\circ$

G.  $45^\circ$

H.  $55^\circ$

J.  $65^\circ$

45. If  $x$  varies directly with  $y^2$ , and  $x = 32$  when  $y = 4$ , what is  $x$  when  $y = 6$ ?

- A. 48
- B. 54
- C. 64
- D. 72

# *Reading Test*

**TIME:** 40 minutes for 36 questions

**DIRECTIONS:** Each of the four passages in this section is followed by ten questions. Answer each question based on what is stated or implied in the passage and shade the corresponding oval on your answer sheet.

## **Passage I — Prose Fiction**

---

This passage is adapted from *A Happy Boy* by Bjørnstjerne Bjørnson, who was a Norwegian poet, novelist, and dramatist.

Line        It was a cloudy evening, not cold; no stars  
were to be seen; the morrow might bring rain.  
A drowsy breeze blew over the snow, which was  
swept clear in patches on the white uplands, while  
(05) in other places it had formed deep drifts. Along  
by the roadside where now snow happened to lie  
there was a margin of slippery ice; it lay blue-  
black between the snow and the bare ground, and  
could be seen glimmering here and there as far as  
(10) the eye could reach. On the mountainsides there  
had been snow-slips; their tracks were black and  
bare, while on each side of them the snow lay  
smooth and white, except where the birch-trees  
clustered together in dark patches. There was no  
(15) water to be seen, but half-naked moors and bogs  
stretched up to rivers and lowering mountains.

The farms lay in large clusters in the midst of  
the level ground; in the dusk of the winter evening  
they looked like black masses from which light  
(20) shot forth over the fields, now from one window,  
now from another; to judge by the lights there was  
a great deal going on inside. Young people, grown-  
up and half-grown up, flocked together from  
various quarters. Very few kept to the road; almost  
(25) all, at any rate, left it when they drew near the  
farms, and slipped away, one behind the cowhouse,  
a pair under the store-house and so forth; while  
some rushed away behind the barn and howled  
like foxes, others answered farther off like cats.  
(30) One stood behind the wash-house and barked like  
an old angry dog. The girls came marching along  
in large bands; they had a few boys, mostly little  
boys, with them, who skirmished around them to  
show off. When one of the gangs of girls came near  
(35) the house and one or other of the big boys caught  
sight of them, the girls scattered and fled into  
the passages or down the garden, and had to be  
dragged out and into the rooms one by one. Some  
were so extremely bashful that Marit had to be

(40) sent for, when she would come out and positively force them in. Sometimes one would come who had not been invited and whose intention it was not to go in, but only to look on, until in the end she would be persuaded just to have one single dance.

(45) Those guests whom she really cared for, Marit invited into a little room where the old people sat and grandmother did the honors; they were kindly received and treated. Eyvind was not among the favored ones, and he thought that rather strange.

(50) The best player of the village could not come until late, so they had meanwhile to manage with the old one, a cottager called Grey Knut. He knew four dances, two spring dances, a halling and an old so-called Napoleon waltz. He struck up, and  
(55) the dancing began. Eyvind did not dare to join in at first, for there were too many grown-up people; but the half-grown ones soon banded together, pushed each other forward, drank a little strong ale to hearten them, and then Eyvind also joined  
(60) in. The room grew very hot, the fun and the ale mounted to their heads.

Marit danced more than anyone else that evening, probably because the party was in her grandparents' house, and so it happened that Eyvind  
(65) caught her eye, but she always danced with someone else. He wanted to dance with her himself, so he sat out one dance in order to run to her directly when it ended, and this he did; but a tall, swarthy fellow with bushy hair pushed in front of him.

(70) "Get away, youngster," he cried and gave Eyvind a shove, so that he nearly fell backwards over Marit. Never had such a thing happened to him, never had anyone been other than kind to him, never had he been called "youngster" when  
(75) he wanted to join in anything. He reddened to the roots of his hair, but said nothing, and drew back to where the new musician, just arrived, had taken his seat and was tuning up. Eyvind looked at Marit dancing with the bushy-haired man, she laughed  
(80) over the man's shoulder so that her white teeth showed, and Eyvind, for the first time in his life, was aware of a strange, tingling pain in his breast.

He looked at her again and again, and the more he looked the clearer it seemed to him that  
(85) Marit was quite grown-up.

1. The passage is most likely part of a:

(A) fable.

(B) romance novel.

- (C) coming-of-age tale.  
(D) tragic poem.
2. The character of Marit can best be described as:  
(F) gregarious and influential.  
(G) extremely bashful.  
(H) cold and callous.  
(J) kind and grandmotherly.
3. When the author states in Line 82 that Eyvind experienced a “strange, tingling pain in his breast,” he is inferring that Eyvind:  
(A) had drunk too much ale.  
(B) was feeling embarrassed that he had been called “youngster.”  
(C) was physically injured by the tall, swarthy fellow’s shove.  
(D) was experiencing his first feelings of disappointment.
4. The author suggests that Eyvind is a rather timid individual in all of the following instances EXCEPT:  
(F) when he fails to join in the dancing at first because all of the dancers were older than he.  
(G) when he said nothing in response to the bushy-haired man.  
(H) when he continued to watch Marit dance with the bushy-haired man.  
(J) when he failed to respond to the grandmother’s invitation to enter the little room.
5. The author most likely provides the description in the first paragraph to:  
(A) place the events of the house in perspective within the larger realm of the natural world.  
(B) demonstrate how the party attendees braved harsh, cruel conditions in order to reach their destination.

- (C) provide a glimpse into typical Scandinavian life.
- (D) highlight the frigid and potentially dangerous conditions the characters faced every day.
6. The best way to describe Marit's feelings for Eyvind is that she:
- (F) pitied him.
- (G) was secretly in love with him.
- (H) felt repulsed by him.
- (J) was indifferent toward him.
7. The author mentions the little room where the old people sat (Line 46) in order to:
- (A) describe the room where Marit took the timid girls to persuade them to dance just one dance.
- (B) show that Marit cared more for old people than for people her age.
- (C) offer a glimpse of the true nature of the relationship between Marit and Eyvind.
- (D) provide insight into the character of the grandmother.
8. As it is used in Line 32 *bands* most likely refers to:
- (F) gangs of ruffians.
- (G) groupings of young girls.
- (H) members of a parade organized to celebrate a village holiday.
- (J) groups of musicians headed to play at the dance.
9. It can be reasonably inferred from the passage that Eyvind's attendance at the dance:
- (A) consisted primarily of sitting and watching Marit dance with others.
- (B) resulted in the realization that his life was changing.
- (C) was spent sitting with the grandmother and having conversations with older people.

(D) ended with his sulking in the corner because the admonishment from the swarthy fellow was the first time he had ever experienced rejection.

10. It is reasonable to conclude that the people who live in Eyvind's village:

(F) experience cloud cover and cold almost every day because they live very far north.

(G) engage in activities that involve participation by a variety of age groups.

(H) are generally fearful of traveling on the designated roads and prefer to move through the countryside by running from farmhouse to farmhouse.

(J) prefer to dance to music performed by young musicians.

## Passage II — Social Science

---

### Passage A

This passage is adapted from *The Rise and Fall of the U.S. Mortgage and Credit Markets: A Comprehensive Analysis of the Market Meltdown*, by James R. Barth (John Wiley & Sons, Inc.).

Line      The economy has been engaged in a massive  
wave of deleveraging since 2007, a scramble to  
reduce debt and sell assets as well as an attempt  
to obtain new capital from any willing source,  
(05) including the government. Unfortunately, this  
process has caused a major credit crunch and sent  
asset prices further downward. Even solid compa-  
nies with no connection to the real estate and fi-  
nance sectors have been affected as credit markets  
(10) seized up. In the process, a rush to liquidity has  
created severe difficulties for individuals, small  
businesses, large corporations, and even state and  
local governments as they try to obtain short-term

funding simply to meet payrolls and cover ongoing  
(15) operating expenses.

In many cases, the government has now become the buyer of last, if not first, resort, intervening in the market in ways not seen since the New Deal. To contain the damage, the government  
(20) invoked some existing but seldom-used powers and created others out of whole cloth. As the financial sector continued to lurch from crisis to crisis in 2008, the government's response has been marked by an improvisational quality that  
(25) has failed to restore confidence in the financial system.

The government has attempted to shore up mortgages directly. In July 2008, the Housing and Economic Recovery Act authorized the Federal  
(30) Housing Authority to guarantee up to \$300 billion in new 30-year fixed-rate mortgages for subprime borrowers. But the guarantees were conditional on lenders voluntarily writing down principal loan balances to 90 percent of current appraisal  
(35) value. At the same time, the Treasury announced a temporary program to purchase Fannie Mae and Freddie Mac mortgage-backed securities to help make more mortgage financing available to home buyers.

When all of these government interventions failed to stem the growing crisis, even bolder action was undertaken in October. The Fed, in addition to several other new and historic programs, took steps to force down home mortgage rates by  
(45) agreeing to buy up to \$600 billion of housing-related securities issued and guaranteed by Fannie Mae, Freddie Mac, Ginnie Mae, and Federal Home Loan Banks as well as creating a \$200 billion program to lend money against securities backed  
(50) by car loans, student loans, credit card debt, and small-business loans.

## Passage B

This passage is adapted from *Place, Exclusion, and Mortgage Markets*, by Manuel B. Aalbers (John Wiley & Sons, Inc.).

The summer of 2007 marked the beginning of the subprime mortgage crisis. What started as a subprime mortgage crisis quickly developed into a general mortgage and housing crisis. A few  
(55) months later it was clear that there was a credit crunch, and one by one, commentators suggested

this was the worst crisis since the stock market crash of 1929 and the subsequent crisis of the early 1930s. Several of them even claimed that the subprime meltdown of 2007 would soon make the stock market crash of 1929 look like a small crisis. It also became clear that the credit crunch was not limited to the United States; investors and financial institutions around the globe were affected by what seemed at first a very specific and limited problem. Since financial institutions are a crucial cornerstone of the economy, the crisis spread not only from the U.S. to the rest of the world, but also from credit markets to all kinds of markets. Globalization implied a greater interconnectedness not only between different places, but also between different markets.

In society, people are excluded not only on the basis of class and race, but also on the basis of place. The mortgage market is no different; in fact, it is exactly highly developed and institutionalized markets like the mortgage market that have a tendency to exclude. Mortgage redlining is the identification of an area, usually a neighborhood or ZIP code area, where no mortgage loans are to be issued, which is a form of place-based financial and social exclusion. Mortgage applicants are excluded *from* obtaining housing by being denied mortgages in redlined neighborhoods. Current homeowners are excluded *through* housing because they are unable to sell their house, becoming trapped in their neighborhood. In the case of mortgage financing, the supply side (i.e., the lenders) has the power to exclude part of the demand side (i.e., the customers). Financial institutions can provide the essential underpinnings for positive social development, but they also have destructive power — the power to deny credit loans. One possible method is to put certain neighborhoods on a black list. A financial institution might blacklist a neighborhood if it is already considered or expected to develop into a “slum.” Almost without exception it is a self-fulfilling prophecy.

11. According to Passage A, one purpose of the Housing and Economic Recovery Act was to:

- (A) allow home buyers more access to mortgage loans.
- (B) force lenders to write down principal loan balances to 90 percent of their current appraisal value.
- (C) restore the public’s confidence in the Federal Housing Authority.

(D) reduce the influence of the federal government in the financial crisis.

12. As it is used in Line 39, *stem* most likely means to:

(F) originate.

(G) grow slowly.

(H) remove.

(J) stop.

13. It is reasonable to infer that the author of Passage A would agree with which of the following statements about Americans' lack of confidence in the financial sector?

(A) The lack of confidence resulted from a lack of attention to borrowers of government funds.

(B) Americans' confidence was completely restored when the bailout plan guaranteed up to \$300 billion in new 30-year fixed-rate mortgages for subprime borrowers.

(C) The government's seemingly unplanned response to the economic crisis and a series of additional crises continues to erode the public's confidence in its leaders.

(D) The actions of the Federal Housing Authority created a sense of stability in the United States economy.

14. According to Passage A, all of the following are components of deleveraging the economy EXCEPT:

(F) offering lower mortgage rates to new homebuyers.

(G) reducing debt.

(H) selling assets.

(J) attempting to gain new capital from any willing source.

15. When the author of Passage B refers to *redlining* in Lines 77, he most nearly means:

- (A) the government practice of trapping people in their neighborhoods.
- (B) the practice of discriminatory loans based solely on class and race.
- (C) denying a mortgage loan based on the ZIP code of the dwelling.
- (D) granting exclusive access to subprime loans to wealthy homebuyers.

16. The primary purpose of the first paragraph in Passage B is to:

- (F) reveal the author's anti-government perspective.
- (G) summarize the effects of a specific and limited problem.
- (H) present an overview of what the government has chosen to do to combat a growing financial crisis.
- (J) describe the pervasiveness of a past financial crisis as well as its national and global effects.

17. The author of Passage B mentions the economic concepts of supply and demand to:

- (A) demonstrate that financial institutions use economic principles for positive social development.
- (B) identify the participants in a mortgage financing relationship.
- (C) illustrate how mortgage lenders decide which neighborhoods to blacklist.
- (D) explain how a global economy works during a financial crisis.

18. The authors of both passages would likely agree with which of the following statements about the state of the U.S. economy in 2007 and 2008?

- (F) The financial crisis decreased an individual's ability to obtain loans.
- (G) The government had intervened in the U.S. market in ways not seen since the New Deal.

- (H) The crisis was the worst one since the stock market crash of 1929.
- (J) The only way the economy would return to normal was through government intervention.

19. The author of Passage B would most likely respond to the temporary program mentioned in Lines 34-35 of Passage A in which of the following ways?

- (A) The program would be more effective if the government allocated more money to it.
- (B) Individuals in certain neighborhoods would be more interconnected as a result of the program.
- (C) The public would gain increased confidence in the country's financial stability as a result of the program.
- (D) The program would likely be ineffective in certain ZIP codes.

20. Which of the following is true regarding the two passages?

- (F) Passage A views the financial crisis as fundamentally a national issue, whereas Passage B is primarily concerned with the global effects of the crisis.
- (G) Passage A is much more optimistic regarding homeowners' ability to buy houses during the crisis than Passage B is.
- (H) Passage A is primarily critical of government practices, while Passage B is primarily critical of those of financial institutions.
- (J) Both passages imply that greater government involvement in the financial crisis would create a better position for homebuyers and sellers in redlined neighborhoods.

### **Passage III — Humanities**

This passage is adapted from *A Guide to Early Printed Books and Manuscripts*, by Mark Bland (John Wiley & Sons, Inc.).

Line        When we look at books as books, we are con-  
scious of more than simply shape, colour, and  
weight. Imagine, for instance, that on the table  
is a copy of an early eighteenth-century poem,  
(05) printed in folio and set in large type with obvious  
spaces between the lines. If a literary person was  
asked "What is the most obvious thing about what  
you are looking at?" their first reply might be  
something like "It is a poem." To the extent that  
(10) a poem involves the layout of type on a page in a  
way that distinguishes it from prose, the answer  
would have some cunning, but to distinguish the  
text as 'a poem' is to invite a literary reading of  
the words as *words*. The most obvious thing about  
(15) the page (before anything had been 'read') is, in  
fact, the size of the type and the space between the  
lines, and that is the step that is often overlooked:  
large type and extra space meant more paper  
was used, more paper meant more expense, and  
(20) someone had to pay the bill — quite possibly not  
the printer, or publisher. The difference between  
looking at a page and seeing "a poem," or seeing a  
relationship between type, paper, and space is the  
difference between "being literary," and thinking  
(25) like a bibliographer. The physical aspects of a text  
are always determined by the economics of book  
production ("Who paid for this?" is a useful ques-  
tion, if one not always possible to answer), as well  
as the materials and methods combined to create  
(30) the document.

There is a second point to the example as well,  
and it has to do with the relationship between  
form and meaning. To recognize that the text is "a  
poem" is to recognize something about its form,  
(35) its conventions, and its readership. In the first  
instance, the text does not matter. If, to make the  
point clear, we were to discover that the text was,  
in fact, a prayer, we would want to know why the  
conventions of one textual form had been applied  
(40) to another; and we would want to know who made  
that decision, why, and whether the text was, in  
some way, verse. What the text actually said would  
still be of secondary importance, and would only  
come into play once we had understood the way in  
(45) which the formal criteria had been reapplied. Over  
time, this is how the conventions of textual design  
evolve: slight adjustments are made to the formal  
aspects of presentation that cumulatively affect  
the appearance of the page in quite radical ways.

(50) Furthermore, texts get presented in new ways to reflect the changing history of their use: an early edition of Shakespeare was printed according to the conventions of seventeenth-century casual reading; a modern edition is usually designed for (55) the classroom with its accompanying introduction, illustrations, notes, and a list of textual variants.

One of the most obvious ways to trace the evolution of a text is to study its typography, or its manuscript equivalent, script. The history of (60) letterforms, and the way in which they are laid out on a page, reflect social conventions as well as individual choice. This is why it is possible, simply by looking at a document, to estimate when it was made to within a period of five or ten years. (65) Bindings similarly reveal periods and tastes, as do the apparently incidental features of format, ornament stocks, and the use of ruled borders. Each of these elements has required a conscious decision by someone at some time, and for this reason it is (70) as necessary to see the text as to read it. Indeed, sometimes it helps not to read the text at all — certainly it helps to read the text only after these other aspects of the book have been taken into consideration.

(75) Bibliography is a historical and analytical discipline concerned with literature in the broadest meaning of that word. Hence, it is an appreciation of literary texts and historical facts that usually shapes a desire to recover more accurately the (80) history of a text through the processes of its making and the ways in which it was read. The point, however, is that in order to understand printed books and manuscripts, the approach to literary documents cannot be limited to 'high' literature.

21. The primary purpose of the passage is best explained as an attempt to:

- (A) discredit other authors who define early literary works only by observing their form.
- (B) illustrate that the best way to trace the evolution of a text is to examine its typography.
- (C) argue that a study of the physical aspects of books is more important to an analysis of early literature than reading its content and observing its form.
- (D) show that an analysis of historical literature involves paying attention to more factors than merely what the works actually say.

22. As it is used in Line 12, *cunning* is best defined as:
- (F) slyness.
  - (G) wisdom.
  - (H) folly.
  - (J) danger.
23. The author describes all of the following as means of estimating a book's age EXCEPT:
- (A) examining its binding.
  - (B) paying attention to the way it observes social conventions in its ornamentation.
  - (C) observing whether it is written in the form of a poem, prayer, or other literary type.
  - (D) looking at the way the letters and words are formed.
24. The author would argue that the primary difference between the quality of "being literary" and that of "thinking like a bibliographer" is:
- (F) one requires an appreciation for literary texts and historical facts, and the other ignores altogether the texts and their place in history.
  - (G) one considers the financial components of book making, and the other does not.
  - (H) one looks at the written page and sees a poem, and the other looks at a page and sees the relationship between type, paper, and space.
  - (J) one recognizes the relationship between form and meaning, and the other considers only the financial aspects of creating a literary work.
25. Which of the following statements about tracking the development of a text is supported by the passage?
- (A) It is possible to determine the approximate age of a text just by looking at the way its letters are formed.

- (B) Often, the most obvious way to establish a book's age is by examining how its story line reveals social conventions.
- (C) It is possible to estimate the age of a text within a period of five to ten years by observing the kind of paper the bookbinder used.
- (D) The best way to determine the age of a book is by reading the text for content and meaning.

26. *Bibliography*, as it is used in Line 73, most likely refers to:

- (F) a list of books and articles that appears at the end of a publication that references the resources the writer used to develop a thesis on a particular subject.
- (G) a list of publications that the author of this passage used to understand printed books and manuscripts.
- (H) the study of the way texts were created and read in an attempt to comprehend their historical context.
- (J) the ornamental script that early publications used to adorn the text.

27. The author would argue that the style of letterforms in a given document reflects the:

- (A) standard practices of the time when the document was written.
- (B) socioeconomic status of the document's creator.
- (C) exact age of the document.
- (D) document's literary genre.

28. The mention of "high literature" in the final paragraph (Line 82) most likely refers to:

- (F) works that can be categorized as having deep meaning.
- (G) works that were costly to produce.
- (H) poems or prayers.
- (J) works that were produced by royalty or high-ranking government leaders.

29. In the second paragraph, the passage cites that a common component of literature designed for modern classrooms is:
- (A) an accompanying test bank to assess students' learning.
  - (B) the use of computerized technology to produce brilliantly colored illustrations.
  - (C) a record of variations of the text.
  - (D) an extensive biography of the author.
30. Which of the following would the author say best describes the way that the conventions of textual design evolve over time?
- (F) Printers and publishers find more cost-effective strategies of reproduction that result in ever-changing font style and line spacing options.
  - (G) Bibliographers' appreciation of literary texts and historical facts produces a system that helps to record more accurately the history of a text's popularity.
  - (H) Creators make small alterations to texts' appearances that eventually result in noticeably different page presentations.
  - (J) As printers and publishers become more aware of what components are aesthetically pleasing to readers of a given type of text, they develop new ways to format text.

**Passage IV — Natural Science**

Line      When people hear the word "prehistoric,"  
they think of animals, especially dinosaurs. But  
there were prehistoric plants as well, and they  
were just as unusual to modern sensibilities as the  
animals of those ancient times. Evidence of early  
(05) plant life comes from fossils. Fossils may have  
resulted from leaves and stems that fell into a lake  
and stuck in the mud at its bottom. The plants  
avoided decay because they were buried quickly  
in the sediment and were not exposed to oxygen.  
(10) As the mud turned into rock the carbon films and  
impressions of the plant parts were preserved.  
Pieces of wood, sometimes whole trees, became  
fossilized when water filled all their pores with  
silica, which is a hard mineral like quartz. Eventu-  
(15) ally the wood turned into stone, through a process  
called petrification.

This fossil record shows scientists how plants  
have evolved over time. During the Jurassic Period  
the dominant plants were cycads, ginkgoes, conif-  
(20) ers and ferns. There is no evidence of flowering  
plants until the next period, known as the Creta-  
ceous Period. One of the oldest known flowers has  
been discovered in rocks that are over 115 million  
years old.

(25)      Among the most interesting of prehistoric  
plants are the cycads, which flourished 65 million  
to 240 million years ago. Cycads are sometimes  
called "living fossils" because they reached their  
peak around 200 million years ago. Cycads are a  
(30) member of the order Cycadales, which contains  
the most primitive seed-bearing plants. Cycads  
are not conifers, but they are related to conifers  
because cycads are also cone bearing.

The plants are extant today, in areas as widely  
(35) scattered as South America, Africa, Australia and  
Malaysia. Although they primarily live in the wet  
tropical or semi-tropical habitats, some species  
can not only survive but thrive in arid regions as  
well. Scientists long considered the widespread  
(40) distribution of the cycad a mystery, as the seeds  
were too large to be carried by wind or ocean cur-  
rents or birds. One popular theory connects the  
migration of cycads to the theory of Continental  
Drift. Briefly, Continental Drift hypothesizes that  
(45) at one point millions of years ago, there existed  
just one continent, a supercontinent named Pan-  
gaea. Over the years, the continents separated,  
drifting apart and taking their flora and fauna  
with them. Thus, the plants that otherwise would  
(50) be not as widely dispersed are found in far-flung  
areas.

If these plants provided sustenance to the gargantuan animals of that time (several times as large as any animals alive today), the plants must have been huge as well. Today's cycads have trunks that can grow up to 50 feet tall. But it is the cones that are perhaps the most impressive. There are two different types of cones, pollen cones (which grow on the male plants) and seed cones (which grow on the female plants), and these can be as long as 36 inches and weigh up to nearly 100 pounds. One variety of seed pods produces bright red seeds. These seeds are ground into flour and used as foodstuffs by people in Africa. Some Japanese cooks mix brown rice with the powdered seeds of some cycads and ferment the mixture into a miso. In America, the Seminole Indians of Florida used the pith of cycads to make bread. Unfortunately, some ground cycad seeds have been found to be carcinogenic (cancer-causing) if not properly prepared.

There are also leaves on the cycad plant, which grow into a sort of crown and thus make many people who merely glance at a cycad think it is a palm tree. The trunks may occasionally grow underground, leaving an impression that the leaves are growing directly out of the ground. In fact, many parts of the cycads are underground. Inside the roots of the cycad are blue-green algae. The conversion of atmospheric nitrogen into ammonia is one way the cyanobacteria supply the cycad with inorganic nitrogen. It is fascinating to note that even though the cyanobacteria are in the dark underground, they have the same membrane structure and pigments of other bacteria that thrive in the sunlight. Why does this strange structure remain? One theory is that evolution has not yet had sufficient time to change the portions that at one point had been essential to the plant's survival.

Despite its longevity, the cycad, according to the World Conservation Union's Cycad Specialist Group, is one of the most threatened groups of plants in the world. Of the more than 320 species in existence, over half are threatened or endangered. Groups like the Cycad Society devote themselves to funding education and scientific research efforts to promote cycad conservation and ensure this prehistoric plant's survival for another 200 million years.

31. The main purpose of the passage is to:

- (A) discuss similarities between prehistoric animals and prehistoric plants.
- (B) refute the theory that cycads were spread via birds.
- (C) contrast and compare prehistoric and current plant life.
- (D) provide an overview of cycads.

32. In Line 35, the word *extant* most nearly means:
- (F) extinct.
  - (G) prehistoric.
  - (H) narrowly distributed.
  - (J) still existing.
33. The passage mentions that scientists have had difficulty coming up with a definitive explanation for:
- (A) why the cycad is found in so many different locations.
  - (B) what caused the continents to drift apart.
  - (C) why prehistoric plants were so much larger than current plants.
  - (D) why the supercontinent separated in the first place.
34. Which of the following is true about the fossil record of early plant life?
- (F) It provides less information about plants than the fossil record of animals provides about animals.
  - (G) It provides an explanation of how earlier plant life has developed into modern flora.
  - (H) It shows evidence of flowering plants in all known prehistoric periods.
  - (J) It was created by decayed plants that had never been exposed to oxygen.
35. The author's purpose in mentioning Pangaea is to:
- (A) provide a possible reason for why the cycad is extinct today.
  - (B) prove the cycad was once the largest plant on earth.
  - (C) suggest one cause for the cycad's widespread distribution.
  - (D) refute the theory that the continents were once connected.

36. The passage suggests that the Jurassic Period:
- (F) contained only non-flowering plants.
  - (G) was the period in which cycads, ginkoes, conifers, and ferns became extinct.
  - (H) occurred about 115 million years ago.
  - (J) existed immediately after the Cretaceous Period.

# *Science Test*

**TIME:** 40 minutes for 40 questions

**DIRECTIONS:** Following are seven passages and then questions that refer to each passage. Choose the best answer and shade in the corresponding oval on your answer sheet.

## **Passage I**

Buoyancy is a force that acts in the upward direction on objects which are fully or partially submerged in a fluid. The two laws of buoyancy, which were discovered by Archimedes in the third century B.C., are as follows:

1. For fully submerged objects, the upward buoyant force is equal to the weight of the fluid displaced.
2. For floating objects, the weight of the object is equal to the weight of the fluid displaced.

In general, denser objects are less buoyant, and denser fluids provide more buoyancy to objects submerged in them. A more buoyant object will be able to float and carry more weight before it sinks, while a

less buoyant object will sink with less weight applied. The shape of the object also has an effect on buoyancy, particularly for floating objects.

A student performed two studies to investigate how material and fluid type affect buoyancy. In each study, miniature boats were constructed with identical size and dimensions. The masses of the boats were not identical because of the varying material densities. The boats were placed in fluid, and 1 kilogram weights were incrementally placed inside of the boats until the boats no longer floated.

### Study 1

In the first study, three different boats with the exact same size and dimensions were constructed from wood, aluminum, and concrete. Each of the boats was placed in pure water, and weights were placed in the center of the boats until the boats sunk. The results are shown in Table 1, indicating the maximum weight that each boat was able to hold before sinking.

### Study 2

In the second study, a single boat made of wood was placed in three different liquids, and weights were placed in the center of the boat until it no longer floated. The three fluids tested were oil, pure water, and sea water. The results are shown in Table 2, indicating the maximum weight the boat was able to hold before sinking in each fluid.

**TABLE 1**

<i>Boat Material</i>	<i>Maximum Weight Supported before Sinking (kg)</i>
Wood	13
Aluminum	7
Concrete	8

**TABLE 2**

<i>Fluid Used</i>	<i>Maximum Weight Supported before Sinking (kg)</i>
Oil	11

---

**Fluid Used    Maximum Weight Supported before Sinking (kg)**

---

Pure water    13

---

Sea water    14

---

---

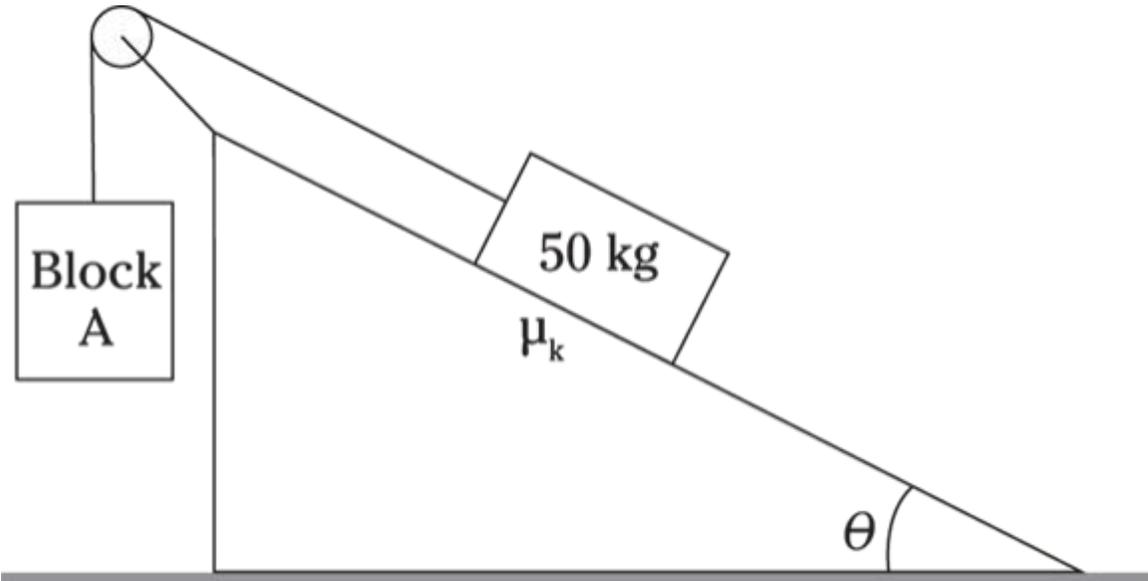
1. Which of the following material and fluid combinations was used in both of the two studies?
  - (A) concrete and pure water
  - (B) wood and oil
  - (C) wood and pure water
  - (D) aluminum and sea water
  
2. If a trial had been conducted using an aluminum boat with oil as the fluid, what would have been the maximum weight supported before sinking?
  - (F) 7 kg
  - (G) greater than 7 kg
  - (H) less than 7 kg
  - (J) The data from the two studies does not provide enough information to predict the results of that combination.
  
3. Which of the following conclusions is not supported by the data?
  - (A) Pure water provides more buoyancy to floating objects than sea water.
  - (B) Oil provides less buoyancy to floating objects than pure water.
  - (C) A boat made of concrete is less buoyant than one of the same size made of wood.
  - (D) A boat made of wood is more buoyant than one of the same size made of aluminum.
  
4. Based on the data in Tables 1 and 2, which of the following appears to have the greatest effect on buoyancy?

- (F) boat material
  - (G) boat size
  - (H) fluid
  - (J) The data does not provide enough information to make a conclusion.
5. According to Table 1, which of the following are likely to have similar densities?
- (A) wood and aluminum
  - (B) aluminum and concrete
  - (C) concrete and wood
  - (D) wood and pure water
6. According to Table 2, which of the following fluids is the densest?
- (F) oil
  - (G) pure water
  - (H) sea water
  - (J) gasoline
7. Which of the following is true about the two studies?
- (A) In Study 1, the fluid used was held constant and the boat material was varied.
  - (B) In Study 2, the fluid used was held constant and the boat material was varied.
  - (C) In both studies, the fluid used and the boat material were varied.
  - (D) In both studies, the fluid used and the boat material were held constant.

## Passage II

---

Suppose that a 50-kg block is placed on an incline as shown in Figure 1 below. A cable running over a frictionless pulley connects the 50-kg block to another block which is hanging off the edge of the ramp. The coefficient of friction between the block and the ramp,  $\mu_k$ , is unknown.



**FIGURE 1:** Configuration of blocks.

When the blocks are placed in the configuration shown in Figure 1, the 50-kg block slides up the ramp as Block A moves downward and eventually contacts the ground. Table 1 shows the results of 12 trials where Block A was released from rest in the position shown in the figure. The amount of time it took for Block A to reach the ground was recorded. For each trial, the mass of Block A was varied, as well as the angle  $\theta$  of the ramp.

**TABLE 1**

<i>Mass of Block A (kg)</i>	<i>Angle of Ramp (degrees)</i>	<i>Time for Block A to Reach the Ground (seconds)</i>
40	10	0.62
	20	0.78
	30	1.13

<i>Mass of Block A (kg)</i>	<i>Angle of Ramp (degrees)</i>	<i>Time for Block A to Reach the Ground (seconds)</i>
	40	6.38
50	10	0.57
	20	0.66
	30	0.78
	40	1.00
60	10	0.54
	20	0.60
	30	0.68
	40	0.78

8. Across all ramp angles tested, as Block A's mass increased, the time for Block A to reach the ground:
- (F) increased only.
  - (G) decreased only.
  - (H) increased then decreased.
  - (J) decreased then increased.
9. At which ramp angle did Block A reach the ground fastest?
- (A) 10 degrees
  - (B) 20 degrees
  - (C) 30 degrees
  - (D) 40 degrees
10. Suppose an additional trial is performed with the mass of Block A as 70 kg and a ramp angle of 30 degrees. How long will it take for Block A to reach the ground?
- (F) 0.74 seconds
  - (G) 0.62 seconds
  - (H) 1.15 seconds

**(J)** 0.68 seconds

11. Table 1 best supports which of the following statements about the time for Block A to reach the ground?

**(A)** If the ramp angle is increased and the mass of Block A is increased, Block A will reach the ground more slowly.

**(B)** If the ramp angle is increased and the mass of Block A is decreased, Block A will reach the ground faster.

**(C)** If the ramp angle is decreased and the mass of Block A is increased, Block A will reach the ground faster.

**(D)** If the ramp angle is decreased and the mass of Block A is decreased, Block A will reach the ground more slowly.

12. Based on Table 1, which combination of Block A mass and ramp angle would most likely produce equilibrium (no movement) of the blocks?

**(F)** 50 kg, 24 degrees

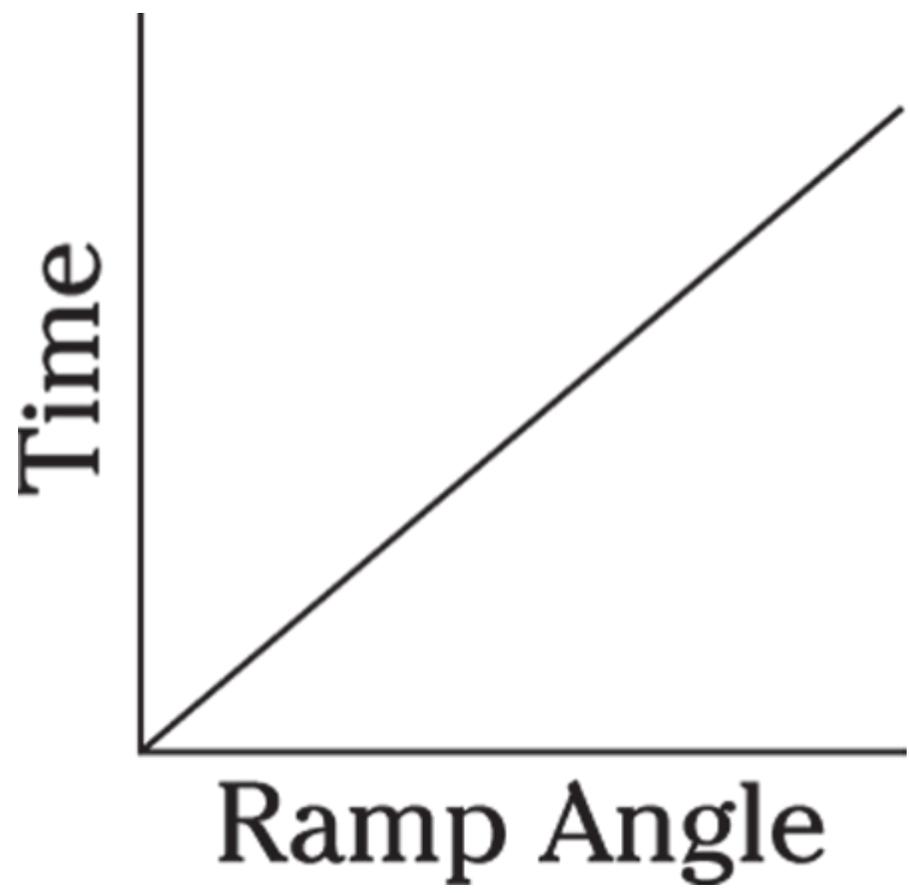
**(G)** 40 kg, 8 degrees

**(H)** 60 kg, 32 degrees

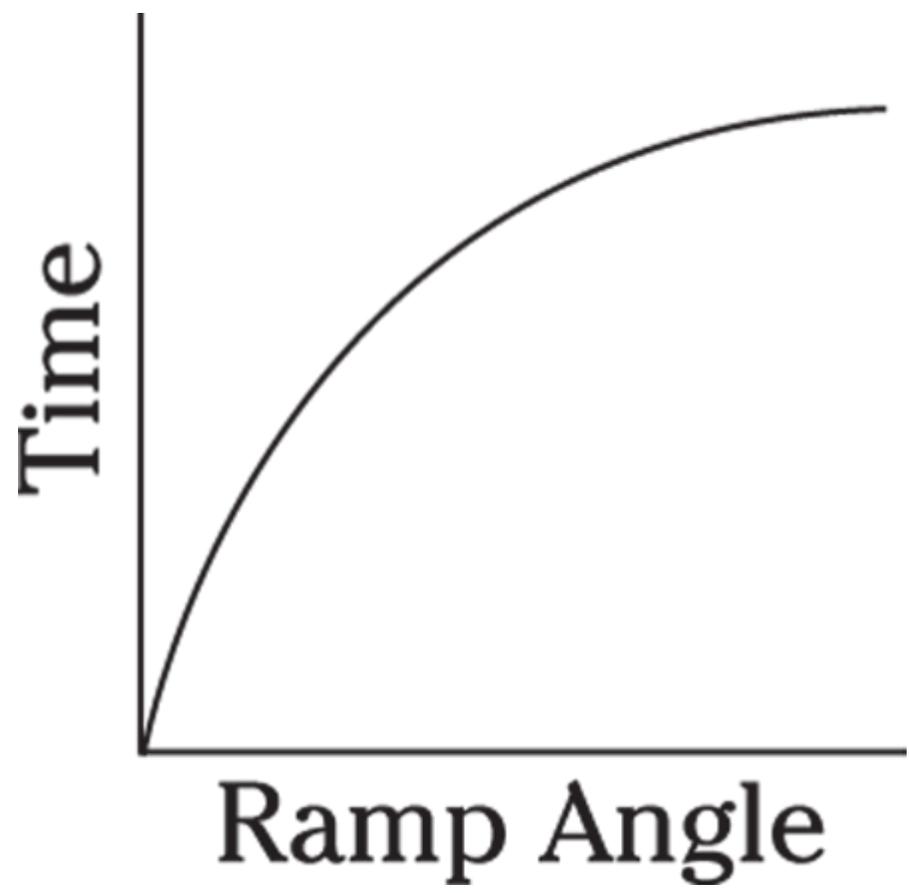
**(J)** 40 kg, 41 degrees

13. Which of the following graphs best represents the relationship between ramp angle and amount of time for Block A to reach the ground?

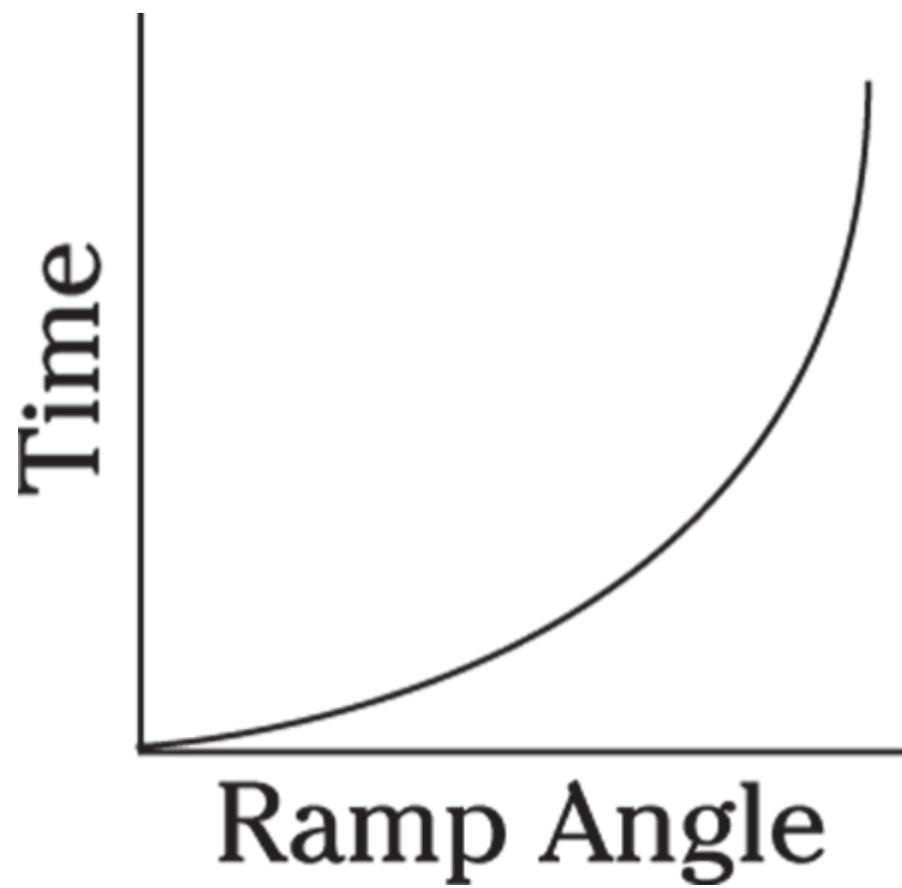
**(A)**



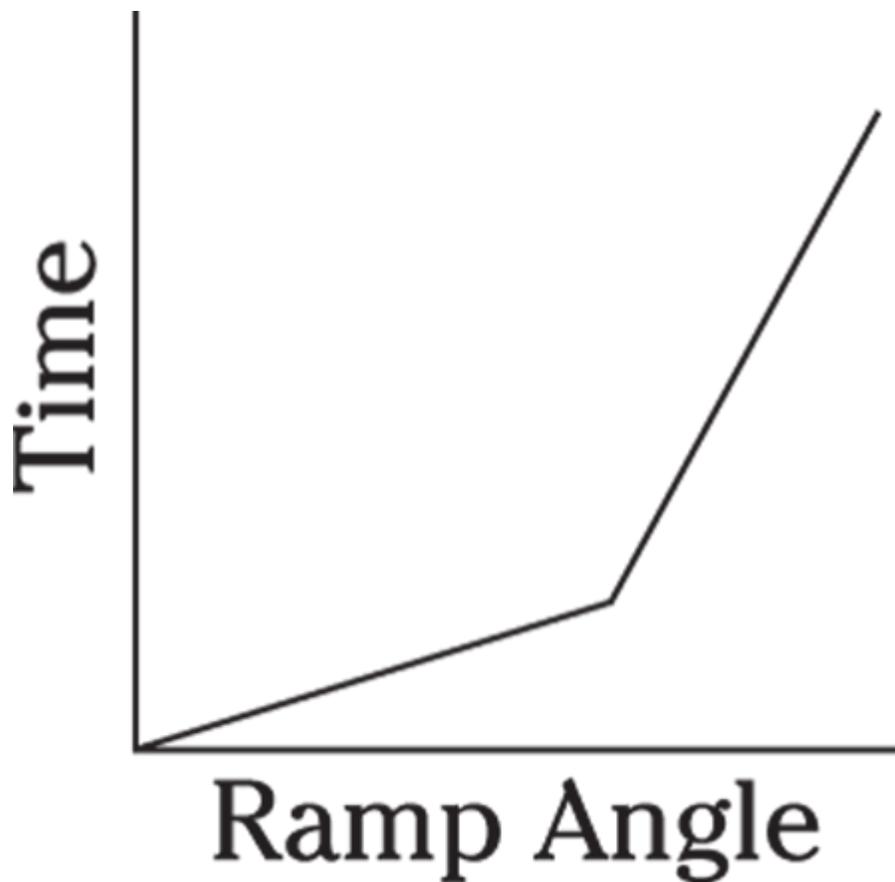
(B)



(C)



(D)

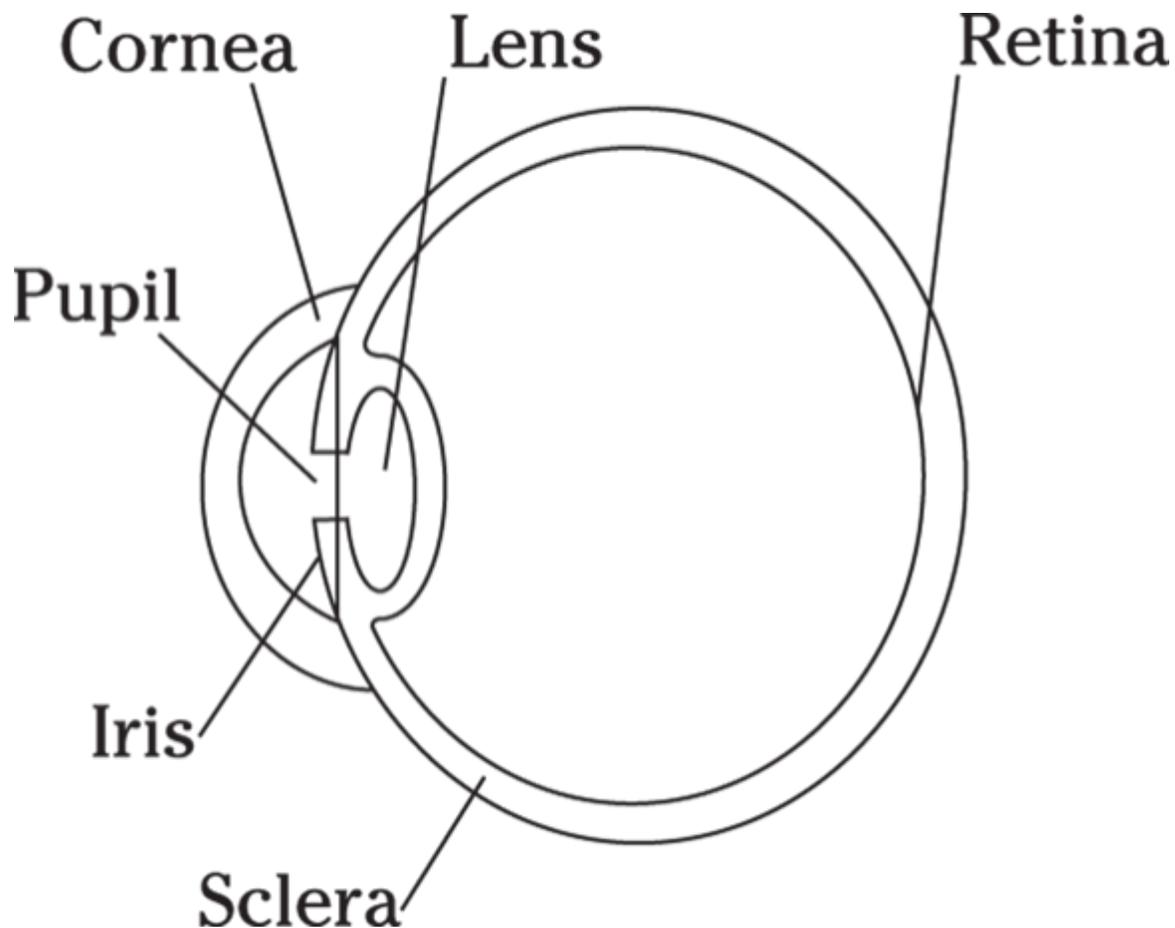


### Passage III

---

Poor vision is a relatively widespread problem among humans. The most common vision defects include myopia, hyperopia, astigmatism, and presbyopia. Myopia is commonly called “nearsightedness” and is characterized by the ability to see only nearby objects while far-away objects appear blurry. The opposite of myopia is hyperopia, commonly called “farsightedness.” This is where the lens of the eye focuses images behind the retina, making nearby objects difficult to see. Astigmatism is a condition caused by an irregular cornea or lens where the eye cannot focus an image properly on the retina, resulting in blurry vision. Presbyopia occurs with increased age and results in the inability to focus on nearby objects, often making reading difficult. Figure 1 below depicts the basic anatomy of the human eye.

There are multiple viewpoints on the causes and proper treatment of poor vision, two of which are explained below.



**FIGURE 1:** Anatomy of the human eye.

### **Genetic Theory**

Vision problems in humans are hereditary and occur regardless of environmental factors. Vision exams should be conducted on children beginning at a young age so that issues can be identified early. The best solutions available to treat vision errors include eyeglasses, contact lenses, and eye surgery. These treatments quickly correct the majority of vision issues and have been used for centuries in the past, as shown in artwork and literature. More recently, contact lenses have been used as a convenient solution for vision correction, providing an additional treatment option to those with poor vision. Additionally, laser eye surgery has been shown to be a long-lasting solution for refractive vision errors.

### **Environmental Theory**

Poor vision is a result of improper use of the human eye. When one focuses for too long on nearby objects, such as books, televisions, or computers, the eye is weakened, and this leads to vision errors. When these issues are corrected through artificial vision correction devices, such as eyeglasses and contact lenses, the eyes adapt to this handicap and are allowed to degenerate further, causing the vision problem to worsen. Human children who spend a great deal of time focusing their eyes on nearby objects rather than playing outside are much more likely to develop vision defects early on in life. Humans who make a habit of not focusing on nearby objects experience much fewer cases of poor vision.

A more natural and healthier solution to vision problems is learning to properly exercise the eyes and to reduce time spent focusing on nearby objects. Many people with vision errors such as myopia and astigmatism have been able to correct or greatly reduce their refractive error through exercising the muscles around their eyes. This exercise, combined with giving the eyes proper amounts of relaxation, serves to prevent as well as reverse common vision errors.

14. According to the genetic theory, which of the following humans is most likely to have a vision error?

- (F) an adult who spends time focusing on nearby objects
- (G) a human who regularly practices eye exercises
- (H) a child whose parents have poor vision
- (J) a child who spends a great deal of time outdoors

15. Which of the following statements about vision errors would be most consistent with both theories?

- (A) Vision errors are caused by a lack of reading.
- (B) Vision errors can be corrected at a young age.
- (C) Vision errors have existed for centuries.
- (D) Vision errors are more common among children than adults.

16. According to those who espouse the environmental theory, which of the following beliefs held by those who follow the genetic theory creates the most significant drawback to correcting vision problems?
- (F) Vision errors are hereditary.
  - (G) Humans have experienced vision errors for centuries.
  - (H) There are multiple ways to correct vision errors.
  - (J) Vision errors should be corrected at a young age with eyeglasses.
17. Those who follow the environmental theory assume that:
- (A) vision problems can develop at any time during life.
  - (B) children's vision is not affected by watching television.
  - (C) laser eye surgery is a permanent solution to vision errors.
  - (D) vision problems cannot be reversed, only prevented.
18. Which of the following is consistent with the genetic theory but not with the environmental theory?
- (F) Eyeglasses allow humans to see correctly.
  - (G) Focusing on nearby objects causes vision errors.
  - (H) Exercising eye muscles has no effect on vision.
  - (J) A child with vision errors is likely to have a sibling who has vision errors.
19. Which of the following would be accepted by advocates of either theory?
- (A) Vision errors may be identified early in life.
  - (B) Eye exercises are a healthy alternative to eyeglasses.
  - (C) Vision deterioration is less likely in those who wear eyeglasses.
  - (D) Children who play outside are less likely to develop vision errors.
20. Evidence suggests that vision errors are more common in some societies in the world and less common in others. Which of the

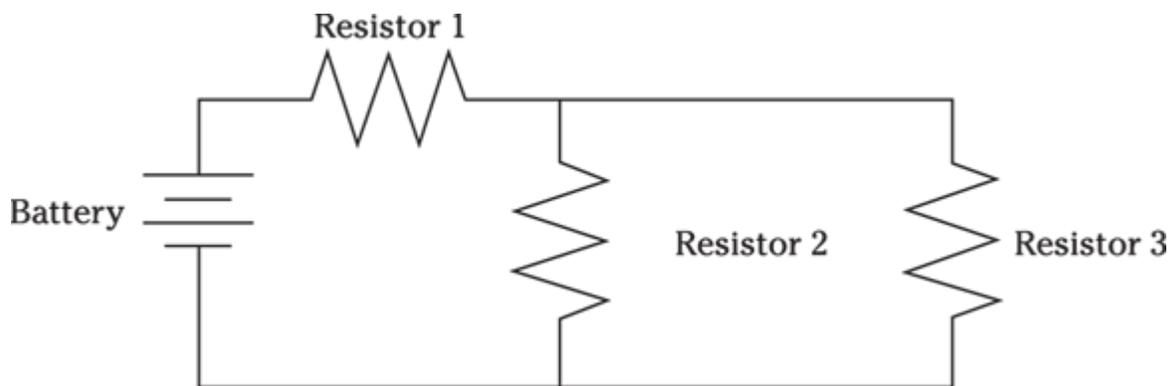
following theories is supported by this evidence?

- (F) the genetic theory
- (G) the environmental theory
- (H) both theories
- (J) neither theory

### Passage IV

---

An electrical circuit is essentially a circular path in which electrons can flow. Typically, a voltage source, such as a battery, will provide the necessary power to keep the electrons flowing through the circuit. The rate of flow of electron charge in the circuit is called electrical current. Electrical current is measured in amperes (A). A student constructed a simple electrical circuit using a battery, resistors, and wire. The potential of a battery is measured in volts (V), and the resistance of resistors is measured in ohms ( $\Omega$ ). Figure 1 represents the electrical circuit configuration.



**FIGURE 1:** A simple electrical circuit configuration.

The student conducted two studies on the electrical circuit to examine the effect of changing components in the circuit. Each of the studies is described below, followed by the results obtained in the study.

#### Study 1

In the first study, the battery used to power the circuit was changed, and the voltage across each resistor was measured using a

voltmeter by placing the voltmeter in parallel with each resistor. The resistances of Resistors 1, 2, and 3 were  $100\Omega$ ,  $1000\Omega$ , and  $5000\Omega$  ohms, respectively. Table 1 shows the results.

## Study 2

In the second study, the resistance of Resistor 1 was changed, and the current through each resistor was measured using a digital multimeter. In order to take the measurements, the multimeter was placed in series with each of the resistors. The current measurements taken were very small in magnitude, so they are shown in milliamperes (mA), which are one-thousandth of an ampere. The 9.0 volt battery from the first study was used in the circuit. Table 1 shows the results.

**TABLE 1 Voltage Measured across Resistor (Volts)**

<i>Battery Used (V)</i>	<i>Resistor 1 (<math>\Omega</math>)</i>	<i>Resistor 2 (<math>\Omega</math>)</i>	<i>Resistor 3 (<math>\Omega</math>)</i>
1.5	0.16	1.34	1.34
3.0	0.32	2.68	2.68
4.5	0.48	4.02	4.02
6.0	0.64	5.36	5.36
9.0	0.96	8.04	8.04

**TABLE 2 Current Measured through Resistor (mA)**

<i>Resistor 1 Resistance (<math>\Omega</math>)</i>	<i>Resistor 1</i>	<i>Resistor 2 (<math>\Omega</math>)</i>	<i>Resistor 3 (<math>\Omega</math>)</i>
100	9.64	8.04	1.61
200	8.71	7.26	1.45
300	7.94	6.62	1.32
400	7.30	6.08	1.22
500	6.75	5.63	1.13

21. How many different batteries did the student use in both studies?

(A) 1

- (B) 5
- (C) 6
- (D) 10

22. Study 1 suggests that the voltage measured across Resistor 2 is smallest when the battery voltage is:

- (F) 1.5 V.
- (G) 3.0 V.
- (H) 6.0 V.
- (J) 9.0 V.

23. Which of the following best describes the difference between Studies 1 and 2?

- (A) In Study 1, the Resistor 3 resistance was varied; in Study 2, the battery voltage was varied.
- (B) In Study 1, the battery voltage was varied; in Study 2, the Resistor 2 resistance was varied.
- (C) In Study 1, the battery voltage was varied; in Study 2, the Resistor 1 resistance was varied.
- (D) In Study 1, the Resistor 2 resistance was varied; in Study 2, the Resistor 1 resistance was varied.

24. In Study 2, as the Resistor 1 resistance was increased, the current through:

- (F) Resistor 2 increased and the current through Resistor 3 increased.
- (G) Resistor 3 increased and the current through Resistor 1 decreased.
- (H) Resistor 1 decreased and the current through Resistor 2 decreased.
- (J) Resistor 3 decreased and the current through Resistor 2 increased.

25. Which circuit configuration was used in both studies?

- (A) battery voltage of 1.5 V, Resistor 1 resistance of  $100\Omega$

- (B) battery voltage of 9.0 V, Resistor 1 resistance of  $100\Omega$
- (C) battery voltage of 1.5 V, Resistor 1 resistance of  $500\Omega$
- (D) battery voltage of 9.0 V, Resistor 1 resistance of  $500\Omega$

26. In Study 1, if a 12.0 V battery had been used, the voltage measured across Resistor 2 would have been closest to:

- (F) 10.71 V.
- (G) 8.04 V.
- (H) 1.29 V.
- (J) 0.96 V.

27. Which of the following conclusions about the electrical circuit is best supported by Studies 1 and 2?

- (A) The voltage across Resistors 1 and 2 is always equal, and the current through Resistor 1 is always greater than the current through Resistor 3.
- (B) The voltage across Resistors 2 and 3 is always equal, and the current through Resistor 2 is always greater than the current through Resistor 1.
- (C) The voltage across Resistors 2 and 3 is always equal, and the current through Resistor 3 is always equal to the current through Resistor 2.
- (D) The voltage across Resistors 2 and 3 is always equal, and the current through Resistor 1 is always equal to the sum of the currents through Resistors 2 and 3.

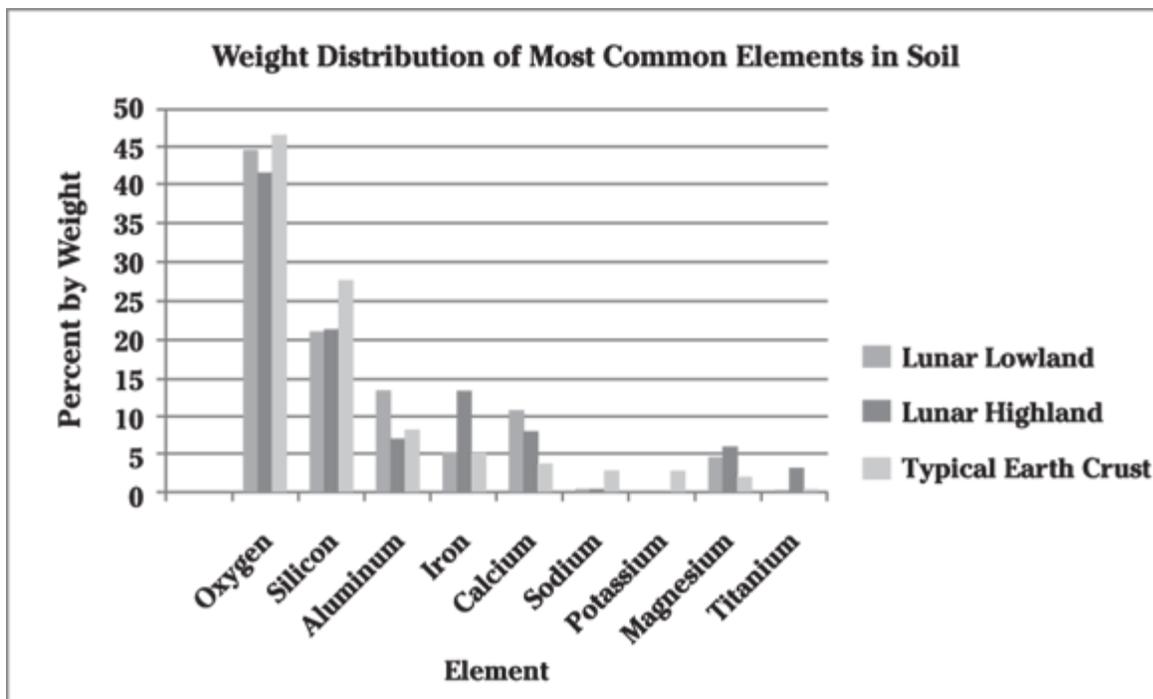
### Passage V

---

When astronauts travelled to the Moon during the Apollo Program, they collected samples of the lunar surface and brought them back to the Earth to be studied. If a long-term colony were ever to be constructed on the Moon, there would have to be resources available that could be used for construction materials, fuel, and food. The lunar samples that were

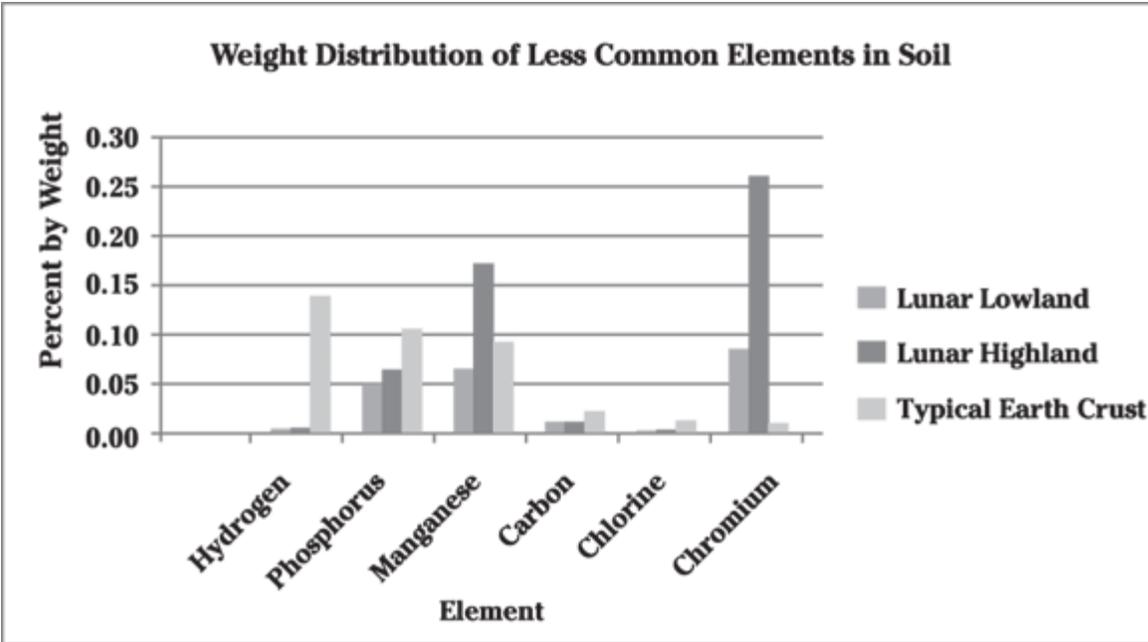
brought back to Earth were analyzed and their compositional elements were determined.

Samples from the Moon are categorized depending on where they were collected. Those taken from the dark-colored low-lying areas are considered to be from the lunar lowlands, while those taken from the light-colored elevated areas are considered to be representative of the lunar highlands. Figure 1 is a graph showing the most common elements by weight percent that are typically present in the Earth and how these compare to the elements found in the lunar highlands and lowlands.



**FIGURE 1:** Comparing the elements found in the Earth's surface to those found in the Moon's surface.

Additional elements are found in the Earth's crust as well as on the Moon, but they are present in much smaller weight percentages. Figure 2 compares these less common elements in the lunar highlands and lowlands with typical Earth crust.



**FIGURE 2:** Comparing less common elements in the lunar surface to those in the Earth's crust.

28. Which of the following elements was most common in the Moon soil samples?
- (F) carbon
  - (G) manganese
  - (H) chromium
  - (J) titanium
29. Which of the following elements comprises the largest percent by weight in the lunar highlands?
- (A) aluminum
  - (B) iron
  - (C) calcium
  - (D) sodium
30. In larger concentrations, chromium can pose a health hazard to humans. According to Figure 2, what location would be the most dangerous for humans to inhabit because of chromium?

- (F) lunar lowlands
- (G) lunar highlands
- (H) Earth landmasses
- (J) Earth oceans

31. Which of the following elements are found in higher concentrations in the Earth's crust than in the lunar lowlands?

- (A) silicon and aluminum
- (B) iron and calcium
- (C) sodium and potassium
- (D) chlorine and chromium

32. Hydrogen, carbon, and oxygen are important in the production and use of fuel, an essential resource. Which of the following conclusions about the data causes the most concern for prospective lunar inhabitants?

- (F) Oxygen is present in soil on the Moon and on the Earth in roughly similar concentrations.
- (G) Hydrogen is present in higher concentrations in the lunar lowlands than in the lunar highlands.
- (H) Oxygen is present in soil on the Earth in higher concentrations than carbon.
- (J) Hydrogen is present in smaller concentrations on the Moon than on the Earth.

33. Which of the following correctly lists elements in the lunar lowlands from lowest to highest concentration?

- (A) iron, calcium, aluminum
- (B) aluminum, calcium, iron
- (C) iron, aluminum, calcium
- (D) calcium, iron, aluminum

## Passage VI

---

A scientist performed two studies to determine the factors affecting the spiciness of jalapeño peppers. Chili peppers like the jalapeño are spicy because of a chemical compound contained within them called capsaicin. To quantify the spiciness, the Scoville heat unit scale is used, which is a measure of the amount of capsaicin in the pepper. Higher capsaicin results in a higher measure of Scoville heat units, which corresponds to a spicier pepper.

The plants used in the studies were grown from a single group of seeds and planted in the same type of soil and given the same amount of light each day. Test groups were designed to vary the watering frequency and soil temperature of the plants to determine the resulting effects on spiciness. There were five plants in each test group, with all plants in a test group being subjected to identical conditions. Multiple peppers from each plant were tested, and the average measured Scoville heat units for all of the peppers from each plant are shown in the tables.

### Study 1

In the first study, the watering frequency was varied for each test group. The soil temperature was kept at  $25^{\circ}$  for all plants in Study 1. The results of the study are shown in Table 1.

### Study 2

In the second study, the temperature of the soil was varied for each test group by placing the pots on heating mats and adjusting the heat to keep the soil at the desired temperature. The plants were watered every three days. The results of the study are shown in Table 2.

**TABLE 1**

<i>Days between Watering</i>	<i>Average Measured Scoville Heat Units of Each Jalapeño Plant in the Test Group</i>					<i>Average of Test Group</i>
1	3,900	3,800	4,300	4,100	4,000	4,020
2	4,400	4,500	4,200	4,300	4,900	4,460

<i>Days between Watering</i>	<i>Average Measured Scoville Heat Units of Each Jalapeño Plant in the Test Group</i>					<i>Average of Test Group</i>
3	5,100	5,100	5,200	4,500	5,100	5,000
4	5,500	5,300	5,700	5,600	5,800	5,580
5	6,300	5,600	6,700	5,200	6,100	5,980

**TABLE 2**

<i>Temperature of Soil (°)</i>	<i>Average Measured Scoville Heat Units of Each Jalapeño Plant in the Test Group</i>					<i>Average of Test Group</i>
15	4,700	4,200	4,300	4,100	4,400	4,340
20	4,800	4,600	4,200	4,700	4,800	4,620
25	5,000	5,100	4,900	4,900	5,400	5,060
30	5,100	5,300	4,800	5,300	4,900	5,080

34. As soil temperature increases, average measured Scoville heat units:
- (F) increase only.
  - (G) decrease only.
  - (H) increase then decrease.
  - (J) stay the same.
35. According to Study 1, if a jalapeño plant has a soil temperature of 25° and produces peppers with an average of 4,500 Scoville heat units, how often is it most likely watered?
- (A) every day
  - (B) every two days
  - (C) every week
  - (D) every two weeks
36. If a jalapeño plant is kept in soil with a temperature of 30° and is watered every three days, what is the best estimate for the average amount of Scoville heat units contained in its peppers?

- (F) 3,800
- (G) 4,400
- (H) 5,100
- (J) 5,600

37. According to Study 1, as a jalapeño plant is watered more often, the spiciness of its peppers:

- (A) increases.
- (B) decreases.
- (C) stays the same.
- (D) is indeterminate.

38. If a scientist wanted to conduct another study on a factor affecting jalapeño spiciness that was not examined in Studies 1 and 2, she should:

- (F) vary the soil composition.
- (G) vary the soil temperature.
- (H) hold constant the frequency of watering.
- (J) hold constant the light provided to the plants.

39. Based on the studies, which of the following combinations of soil temperature and watering frequency would likely produce the widest variation in spiciness from plant to plant?

- (A) water every 5 days and 25°C soil temperature
- (B) water every 3 days and 25°C soil temperature
- (C) water every 3 days and 30°C soil temperature
- (D) water every 3 days and 20°C soil temperature

40. According to Studies 1 and 2, what conditions are most likely to produce spicy jalapeño peppers?

- (F) lower soil temperature and more frequent watering

(G) higher soil temperature and more frequent watering

(H) lower soil temperature and less frequent watering

(J) higher soil temperature and less frequent watering

## *Writing Test*

**TIME:** 40 minutes

**DIRECTIONS:** Respond to the following prompt in a logical, clear, and well-organized essay that follows the rules of Standard English. Write your essay on a separate sheet of lined paper.

A state politician believes that it is becoming increasingly obvious that the preoccupation with a liberal arts curriculum in higher education is misplaced as the unemployment rate and student loan delinquency rate reach new highs. The politician cites statistics from the U.S. Department of Labor that state that the demand for graduates trained in trades, like plumbers, electricians, mechanics, and other technicians, has never been greater than in the last century. Similarly, unemployment rates for vocational grads, who often attend private trade schools rather than state public universities, are also at an all-time low. Based upon these facts, the politician claims it is time for the state legislature to allocate more funding for vocational educational programs instead of for schools that focus on a liberal arts curriculum. A group of professors from the local state college opposes the measure stating that a liberal arts education prepares students for more than just a trade; it provides them with the means to make informed decisions for a lifetime.

*Read and carefully consider these perspectives. Each suggests a particular way of thinking about the current degree of emphasis America places on a liberal arts education.*

**Perspective 1:** The state politician has made some very important points that are worthy of careful consideration. When it comes to higher education, the primary goal is to help students adopt the skills necessary for establishing a profitable and fulfilling career. As far as providing them with “the means to make informed decisions,” well, that ability should be established long before one reaches higher education.

**Perspective 2:** A liberal arts education teaches valuable skills, such as problem-solving, critical thinking, and communication, and these are traits that lend themselves to *any* potential career path. That is why a liberal arts education is so critical. Ask many employers what they value most in a job candidate, and they’ll likely say things like writing and communication skills, and the ability to work well in a team. That’s why a liberal arts education is so inherently valuable.

**Perspective 3:** While a liberal arts education helps students build key skills that will help them as they forge their own post-college careers, those skills will be entirely useless if there are no jobs available in which to utilize them. Thus, more funding does need to be allocated to schools and programs that teach “trades,” although alternative fundraising solutions, such as say, a cigarette tax, should be utilized to reduce the strain felt by liberal arts schools.

### **Essay Task**

Write a unified, coherent essay in which you evaluate multiple perspectives as to whether funding for liberal arts education should be diverted to vocational education programs. In your essay, be sure to:

- Clearly state your own perspective on the issue and analyze the relationship between your perspective and at least one other perspective.

- Develop and support your ideas with reasoning and examples.
- Organize your ideas clearly and logically.
- Communicate your ideas effectively in standard written English.

Your perspective may be in full agreement with any of the others, in partial agreement, or wholly different.