

ACT vs SAT Strength/Weakness Evaluation

Reading and Data Comprehension

Passage II

A *polymorphism* is the persistent occurrence of different appearances for a particular trait in a species. All humans have slight differences in their *genotypes* (genetic code) that result in different *phenotypes* (observable characteristics). Genetic polymorphisms are persistent variations in gene sequences at a particular location in chromosomes, such as those accounting for different blood types. Variations that cannot be observed with the naked eye require techniques such as *capillary electrophoresis* (the separation of genetic or protein material based on charge characteristics using an electric field).

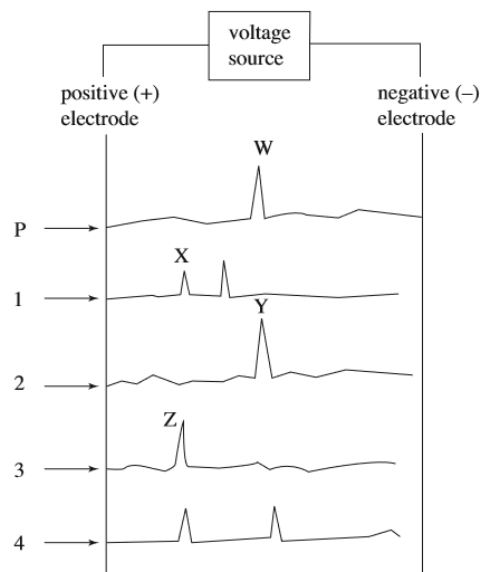
The label on a vial of blood from a hospital patient was lost. The sample just tested positive for a disease of the blood protein hemoglobin that is very common in the hospital population. The sample was traced to a room with 4 patients who were subsequently tested to determine the source of the initial vial.

Tests and Results

Smears of the blood from the unidentified patient (P) and from the 4 newly tested patients (1–4) were observed under the microscope for the appearance of the blood cells. Results are shown in Table 1.

Patient	Blood smear findings
P	Sickle cells
1	Target cells
2	Sickle cells
3	Normal blood cells
4	Sickle cells

Serum was isolated from the blood of Patient P and from Patients 1–4 and placed in separate tubes. A buffer was added to each vial to establish a pH of 8.6. One at a time, samples from each tube were injected into the capillary electrophoresis device set at 7.5 kilovolts (kV) to separate the types of hemoglobin present into peaks. The hemoglobin proteins composing a peak had similar charge characteristics. Figure 1 shows the peaks that resulted from all 5 samples.



Note: Each peak is made up of hemoglobin proteins. W, X, Y, and Z are 4 specific peaks.

Figure 1

6. Are the data in Table 1 consistent with the hypothesis that Patient 4 and Patient P are the same person?
- F. Yes; Patient 4 has the same blood cell appearance as Patient P.
 - G. Yes; Patient 4 has different blood cell appearance as Patient P.
 - H. No; Patient 4 has the same blood cell appearance as Patient P.
 - J. No; Patient 4 has different blood cell appearance as Patient P.
7. What is the most likely reason that the serum samples were treated with a buffer to bring pH to 8.6 ?
- A. Hemoglobin protein breaks down at that pH.
 - B. All bacteria and viruses are destroyed at that pH.
 - C. Capillary electrophoresis separation of hemoglobin functions best at that pH.
 - D. Capillary electrophoresis separation of hemoglobin does not function at that pH.
8. Sickle cell anemia is caused by certain hemoglobin genotype combinations of 3 different alleles. The Hb^A allele is responsible for normal hemoglobin, the Hb^S allele is responsible for one variant that results in sickle cells, and the Hb^C allele is responsible for a different variant also resulting in sickle cells. Based on Table 1, the genotype of Patient 4 could be which of the following?
- I. $Hb^A Hb^A$
 - II. $Hb^A Hb^S$
 - III. $Hb^A Hb^C$
- F. II only
 - G. I or III only
 - H. II or III only
 - J. I, II, or III
9. According to Figure 1, the pattern of protein peaks produced by serum from Patient P most closely resembles the pattern produced by the serum sample from:
- A. Patient 1.
 - B. Patient 2.
 - C. Patient 3.
 - D. Patient 4.
10. Based on Figure 1, the hemoglobin proteins in which of the following 2 peaks were most likely closest in charge characteristic?
- F. W and X
 - G. W and Z
 - H. X and Y
 - J. X and Z
11. During the capillary electrophoresis, all the hemoglobin proteins started with some quantity of charge before migrating from left to right in Figure 1. Therefore, the proteins resulting in peaks furthest to the left must have been the most:
- A. negative, as opposite charges attract each other.
 - B. negative, as opposite charges repel each other.
 - C. positive, as opposite charges attract each other.
 - D. positive, as opposite charges repel each other.

Questions 11-21 are based on the following passage.

This passage is adapted from Hillary Clinton's remarks to the U.N. Fourth World Conference on Women Plenary Session in 1995 in Beijing, China.

There are some who question the reason for this conference. Let them listen to the voices of women in their homes, neighborhoods, and workplaces. There are some who wonder whether the lives of women and girls
5 matter to economic and political progress around the globe. Let them look at the women gathered here and at Huairou—the homemakers and nurses, the teachers and lawyers, the policymakers and women who run their own businesses. It is conferences like this that
10 compel governments and peoples everywhere to listen, look, and face the world's most pressing problems. Wasn't it after all—after the women's conference in Nairobi ten years ago that the world focused for the first time on the crisis of domestic violence?

15 The great challenge of this conference is to give voice to women everywhere whose experiences go unnoticed, whose words go unheard. Women comprise more than half the world's population, 70 percent of the world's poor, and two-thirds of those who are not taught to read and write. We are the primary caretakers for most of the world's children and elderly. Yet much of the work we do is not valued—not by economists, not by historians, not by popular culture, not by government leaders.

At this very moment, as we sit here, women around
25 the world are giving birth, raising children, cooking meals, washing clothes, cleaning houses, planting crops, working on assembly lines, running companies, and running countries. Women also are dying from diseases that should have been prevented or treated. They are watching their children succumb to malnutrition caused by poverty and economic deprivation. They are being denied the right to go to school by their own fathers and brothers. They are being forced into prostitution, and they are being barred from the bank lending offices and
35 banned from the ballot box.

Those of us who have the opportunity to be here have the responsibility to speak for those who could not. As an American, I want to speak for those women in my own country, women who are raising children
40 on the minimum wage, women who can't afford health care or child care, women whose lives are threatened by violence, including violence in their own homes.

Speaking to you today, I speak for them, just as each of us speaks for women around the world who are
45 denied the chance to go to school, or see a doctor, or

own property, or have a say about the direction of their lives, simply because they are women. The truth is that most women around the world work both inside and outside the home, usually by necessity.

50 We need to understand there is no one formula for how women should lead their lives. That is why we must respect the choices that each woman makes for herself and her family. Every woman deserves the chance to realize her own God-given potential. But we must
55 recognize that women will never gain full dignity until their human rights are respected and protected.

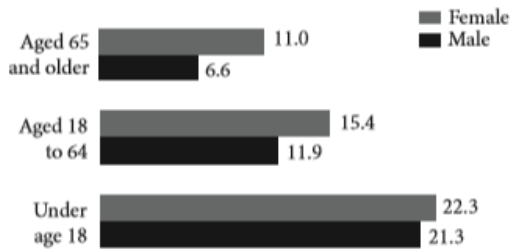
Tragically, women are most often the ones whose human rights are violated. Even now, in the late twentieth-century, the rape of women continues to
60 be used as an instrument of armed conflict. Women and children make up a large majority of the world's refugees. And when women are excluded from the political process, they become even more vulnerable to abuse. I believe that now, on the eve of a new
65 millennium, it is time to break the silence. It is time for us to say for the world to hear that it is no longer acceptable to discuss women's rights as separate from human rights.

If there is one message that echoes forth from this
70 conference, let it be that human rights are women's rights and women's rights are human rights once and for all. Let us not forget that among those rights are the right to speak freely—and the right to be heard.

Women must enjoy the rights to participate fully
75 in the social and political lives of their countries, if we want freedom and democracy to thrive and endure. It is indefensible that many women in nongovernmental organizations who wished to participate in this conference have not been able to attend—or have been
80 prohibited from fully taking part.

As long as discrimination and inequities remain so commonplace everywhere in the world, as long as girls and women are valued less, fed less, fed last, overworked, underpaid, not schooled, subjected to
85 violence in and outside their homes—the potential of the human family to create a peaceful, prosperous world will not be realized.

Poverty Rates by Age and Gender: 2012
(in percent)



Poverty rates in the United States, divided by age and gender. Image courtesy the U.S. Census Bureau.

11

The position that Clinton takes in her speech can best be described as that of

- A) a critic countering a series of arguments.
- B) a scholar analyzing social phenomena.
- C) an advocate seeking a particular outcome.
- D) a mediator seeking a fair compromise.

12

As used in line 22, “valued” most nearly means

- A) increased.
- B) considered.
- C) bought.
- D) insured.

13

In lines 12-13, what is the most likely reason that Clinton mentions the prior “women’s conference in Nairobi?”

- A) To provide an example of a previous, failed attempt to solve the problem of domestic violence
- B) To disagree with those who question the reason for the current conference
- C) To contend that a great number of women and their experiences have gone unnoticed
- D) To offer evidence for the claim that conferences compel people to address problems

14

Which choice provides the best evidence for the answer to the previous question?

- A) Lines 1-2 (“There are . . . conference”)
- B) Lines 9-11 (“It is . . . problems”)
- C) Lines 20-21 (“We are . . . elderly”)
- D) Lines 28-29 (“Women . . . treated”)

15

In lines 36-42, Clinton draws a distinction between

- A) those who work at schools and hospitals.
- B) people who can and cannot speak out.
- C) employed and unemployed women.
- D) women who can and cannot vote.

16

Based on the information in the passage, women face each of the following challenges EXCEPT

- A) lack of access to health care.
- B) violence in their homes.
- C) limited financial resources.
- D) widespread unemployment.

17

As used in line 37, “speak” most nearly means

- A) talk aloud.
- B) scold.
- C) advocate.
- D) gossip.

18

The principal rhetorical effect of the phrase in lines 69-71 ("let it be that...once and for all") is to

- A) argue against attempts to understand women's rights as distinct from other rights.
- B) show that many women who should be at the conference are unable to attend.
- C) emphasize the special nature of women's rights as they relate to human rights at large.
- D) suggest that the need to focus on the specific problems of women is now past.

19

Which choice provides the best evidence for the answer to the previous question?

- A) Lines 54-56 ("But we . . . protected")
- B) Lines 65-67 ("It is . . . rights")
- C) Lines 71-72 ("Let us . . . heard")
- D) Lines 75-79 ("It is . . . part")

20

Based on the information presented in Clinton's speech, it can be inferred that some of those who have important positions of authority in the world

- A) are actively working against the prosperity of women.
- B) do not consider the labor done by women to be of serious import.
- C) are ready to ensure that men and women have equal legal rights.
- D) have made it unacceptable to discuss women's right.

21

Using information in the graph and the passage, it can be reasonably inferred that

- A) in America and across the world the greatest gender disparity in poverty rates is among those 65 and older.
- B) women 18 to 64 comprise 15.4 percent of the world's poor.
- C) while a high percentage of children are poor in America, the opposite is true worldwide.
- D) poverty rates in America are in line with a worldwide gender disparity.

Passage IV

Carboxylic acids are organic compounds containing a *carboxyl* ($-\text{COOH}$) group. These molecules are acidic since they are able to donate protons in solution. The acidity and other physical properties of carboxylic acids are affected by the composition of the atoms bound to the carboxyl group. Table 1 lists the freezing points and boiling points for several carboxylic acids.

Formula	Name	Freezing point ($^{\circ}\text{C}$)	Boiling point ($^{\circ}\text{C}$)
CHOOH	Formic acid	8.4	101
CH_3COOH	Acetic acid	16.6	118
$\text{CH}_3\text{CH}_2\text{COOH}$	Propionic acid	-20.8	141
$\text{CH}_3(\text{CH}_2)_2\text{COOH}$	Butyric acid	-5.5	164
$\text{CH}_3(\text{CH}_2)_3\text{COOH}$	Valeric acid	-34.5	186

Figure 1 shows how the vapor pressure (in mm Hg) of 3 carboxylic acids changes as a function of temperature.

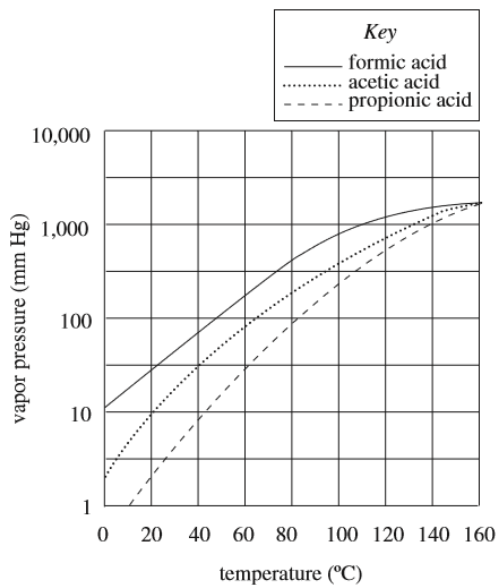


Figure 1

Figure 2 shows how the vapor pressure of the same 3 carboxylic acids changes as a function of concentration when mixed with water at 20°C .

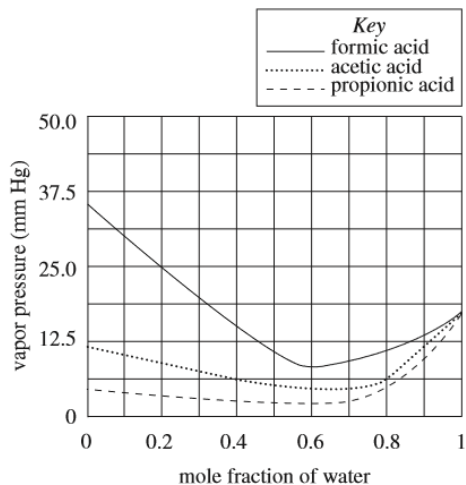


Figure 2

17. Which of the carboxylic acids listed in Table 1 has the *highest* melting point?
- Propionic acid
 - Valeric acid
 - Acetic acid
 - Formic acid

18. According to Figure 2, the vapor pressure of a 0.5 mole fraction solution of water in formic acid is closest to the vapor pressure of which of the following water in formic acid solutions?
- F. 0.9 mole fraction
 - G. 0.8 mole fraction
 - H. 0.6 mole fraction
 - J. 0.4 mole fraction
19. According to Figure 2, as the mole fraction of water in an acetic acid and water solution increases from 0 to 1, the vapor pressure:
- A. decreases, then increases.
 - B. increases, then decreases.
 - C. decreases only.
 - D. increases only.
20. $\text{CH}_3(\text{CH}_2)_4\text{COOH}$ is the chemical formula for the carboxylic acid named hexanoic acid. Based on Table 1, this compound most likely boils at a temperature:
- F. lower than 160°C .
 - G. between 200°C and 220°C .
 - H. between 220°C and 240°C .
 - J. higher than 240°C .
21. According to Figure 1, does acetic acid or formic acid resist vaporization more at 60°C ?
- A. Formic acid, because formic acid has the lower vapor pressure.
 - B. Formic acid, because formic acid has the higher vapor pressure.
 - C. Acetic acid, because acetic acid has the lower vapor pressure.
 - D. Acetic acid, because acetic acid has the higher vapor pressure.

Questions 22-31 are based on the following passage.

Passage 1 is adapted from *Gardner's Art Through the Ages*. © 1991 by Harcourt Brace Jovanovich, Inc. Passage 2 is adapted from John Boardman, *The Parthenon Frieze—Another View*. © 1977 by John Boardman. Both passages discuss the Parthenon Frieze, a band of sculpture that once encircled all four walls of the Parthenon, a temple to the goddess Athena. The naos is the inner sanctuary of the temple.

Passage 1

The inner Ionic frieze of figures was seen from below in reflected light against a colored ground. It enriched the plain wall and directed attention toward the entrance to the temple. Though its subject is still a matter of scholarly dispute (“the riddle of the Parthenon frieze”), it probably represents the Panathenaic procession that took place every four years when the citizens of Athens gathered in the marketplace and carried the *peplos*, or robe, for the statue of Athena to the Parthenon. The robe was not for Phidias’ ivory and gold statue, but for an older, archaic one, kept, ultimately, in the Erechtheion of the Acropolis. This is the first known representation of a nonmythological subject in Greek temple reliefs.

The Panathenaic frieze is unique in the ancient world for its careful creation of the impression of the passage of time, albeit a brief fragment of time. The effect is achieved by the use of a sequence of figures posed to present a gradation of motion. In the part of the frieze that decorated the western side of the naos, the viewer can see the procession forming: youths are lacing their sandals and holding or mounting their horses; they are guided by marshals who stand at intervals, and particularly at the corners, to slow movement and guide the horsemen at the turn. In the friezes of the two long sides of the naos, the procession moves in parallel lines, a cavalcade of spirited youths, chariots, elders, jar carriers, and animals for sacrifice. Seen throughout the procession is that balance of the monumentally simple and the actual, of the tactile and the optical, of the “ideal” and the “real,” of the permanent and the momentary that is characteristically Greek and the perfect exemplification of the “inner concord of opposites” that Heraclitus, the philosopher, wrote of in the sixth century B.C. The movement of the procession becomes slower and more solemn as it nears the eastern side of the naos, when, after turning the corner, it approaches the seated divinities, who appear to be guests of Athena at her great festival. Standing

figures face against the general movement at ever-closer intervals, slowing the forward motion of the procession.

Passage 2

There are many representations of festival or sacrifice in classical Greek art but it is unparalleled to find them attended by a number of guest deities, let alone the complete pantheon. And here we see Athena herself in their number; and they seem to be ignoring the handling of the *peplos*, which is the nearest we get to the culminating act of the procession. Finally, there is the choice of subject. In Lawrence’s words, “Never before has a contemporary subject been treated on a religious building and no subsequent Greek instance is known, with the doubtful exception of the Erechtheum. The flagrant breach with tradition requires explanation.”

It is unthinkable that a classical Athenian, looking up at the frieze, could have said to himself “there I go”, or even more vaguely “there we go”. The subject must be, in some respect, more than mortal and the explanation must lie in the frieze itself and in knowledge of the background to its carving and the building on which it was placed. Moreover the explanation must have been apparent to the classical Athenian who knew this background. We cannot exempt the frieze from the conventions of classical art.

We must rule out, then, the explanation that it is a contemporary or generic statement of the Panathenaic procession conducted by the citizens of Periclean Athens.

In classical Athens of these years there was one group of mortal Athenian citizens who, by their actions, had acquired the right to depiction on public buildings and in the company of the gods: these are the men who fought at Marathon.

Pausanias tells us that the people of Marathon worshipped the Athenian men who died as heroes, and a Hellenic inscription records that young Athenian men lay wreaths at their tomb. The heroising of the dead at Marathon is a fact which cannot be called into dispute, and it was appropriate that they should have been celebrated on the Parthenon, in a position secondary to that of the purely divine and heroic subjects.

My suggestion is that the frieze shows the fighters of Marathon celebrating the prime festival of the goddess Athena, on the temple dedicated to her as a thanksgiving for her aid at Marathon and afterwards, and in a manner which indicates the heroic status of those who fell there.

22

The author of Passage 1 references a quote from Heraclitus (lines 29-35) primarily to

- A) reinforce the sense of the passage of time present in the frieze.
- B) suggest that opposing qualities of the carving present a sense of overall balance.
- C) prove that the style of the frieze is characteristically Greek.
- D) emphasize the contrast between the men in the procession and the goddess Athena at its end.

23

Which of the following best describes the structure of Passage 1?

- A) A purpose for the frieze is proposed, then a description is given.
- B) An interpretation of the frieze is questioned and a new solution is offered.
- C) The frieze is described in detail, with emphasis on its unique qualities.
- D) A historical overview is given that helps explain the layout of the frieze.

24

As used in line 43, “unparalleled” most nearly means

- A) crooked.
- B) normal.
- C) unsurpassed.
- D) unprecedented.

25

The first two paragraphs of Passage 2 primarily serve to

- A) reject the idea that the frieze depicts the Panathenaic procession.
- B) argue against the idea that the frieze represents the passage of time.
- C) suggest that the frieze represents the heroes of Marathon.
- D) outline problems in the traditional interpretation of

26

As used in line 57, “mortal” most nearly means

- A) human.
- B) deadly.
- C) terrible.
- D) common.

27

In the context of the passage, the author’s use of the phrase “there I go” (line 55) is primarily meant to convey the idea that

- A) figures in the frieze were not meant to be portraits of individual citizens.
- B) the frieze cannot be a representation of a human event.
- C) the citizens of Athens did not participate in the Panathenaic procession.
- D) the subject of the frieze should be obvious to modern viewers.

28

Which choice provides the best evidence for the answer to the previous question?

- A) Lines 45-48 (“And here . . . the procession”)
- B) Lines 52-53 (“The flagrant . . . explanation”)
- C) Lines 60-62 (“Moreover . . . background”)
- D) Lines 64-67 (“We must . . . Athens”)

29

The author of Passage 2 would most likely argue that the “youths” (line 21) described in Passage 1 are

- A) citizens of Athens from around the time the Parthenon was built.
- B) Athenian men who died in battle at Marathon.
- C) people of Marathon who were worshipped as heroes in Athens.
- D) purely divine participants in the celebration of a festival of Athena.

30

Passage 2 differs from Passage 1 in that Passage 1

- A) focuses on determining the subject of the frieze.
- B) gives a detailed description of the figures in the frieze.
- C) considers how Greek citizens might have viewed the frieze.
- D) entirely rejects the traditional interpretation of the frieze.

31

Which choice provides the best evidence for the answer to the previous question?

- A) Lines 4-10 (“Though its subject . . . Parthenon”)
- B) Lines 12-14 (“This is the . . . reliefs”)
- C) Lines 15-17 (“The Panathenaic frieze . . . time”)
- D) Lines 19-25 (“In the part . . . turn”)

Grammar and Language Usage

2

Still, the age was not entirely new. Alexander spent nearly all his time abroad, first uniting the Greek kingdom that threatened to fall apart at Philip’s death, then moving on to broader military conquests. **17** Alexander had conquered an incredible amount of land by the time of his death in 323 BCE, **18** as his empire stretched from Greece to modern-day India, some two million square miles. When his armies conquered Persia (now Iran and Iraq) once and for all, he took on the title by which he is still known today: King of Babylon, King of Asia, King of the Four Quarters of the World.

2**17**

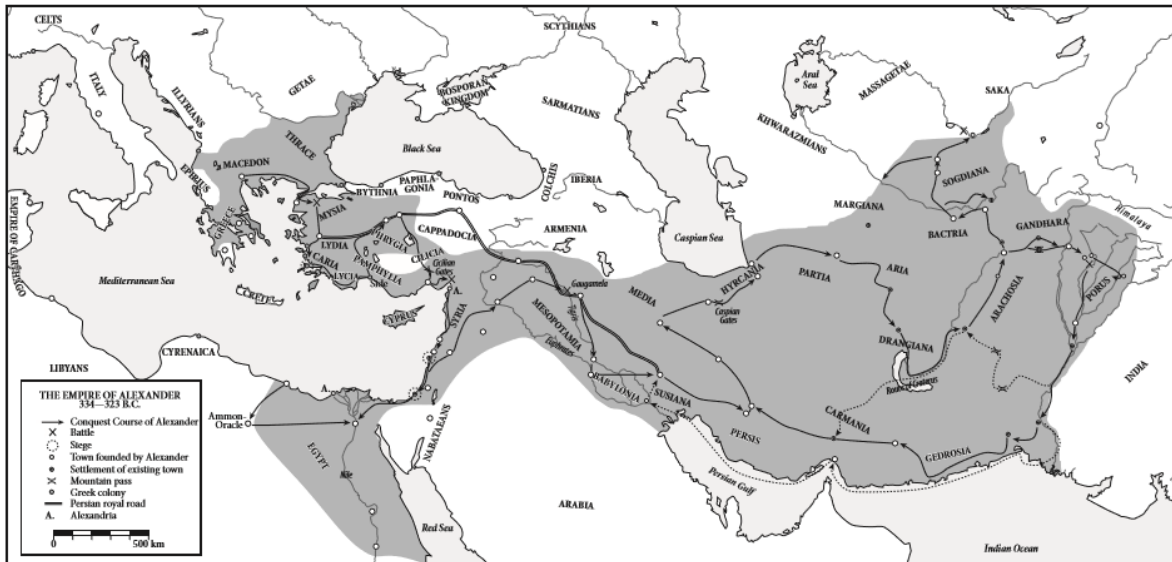
The author wants to insert an introductory phrase or clause at the beginning of this sentence that will emphasize the continuity Alexander’s reign had with the previous one. Which of the following choices would most effectively give this emphasis?

- A) In what must have been truly exhausting,
- B) With great ambition,
- C) As his father had before him,
- D) Just as historians have noted,

18

Which of the following choices gives information consistent with the map shown below?

- A) NO CHANGE
- B) while he traveled on foot throughout most of modern-day Europe,
- C) because he circled the entire Mediterranean Sea and much of the Indian Ocean,
- D) as he conquered all of Italy hundreds of years



Extent of the empire of Alexander the Great

Alexander's historical importance is not merely one of military might, however. **19** He moved to these different parts of the world, he brought Greek culture with him, and his reign marks **20** an unprecedented instance of contact between the ancient East and West. Over twenty cities throughout the empire bear his name. Alexandria, Egypt, perhaps the most famous of these cities, continues to **21** thrive. It is the second-largest city in the modern nation of Egypt.

Perhaps history is the wrong place to understand the accomplishments of Alexander the Great. Epic poetry seems more suitable. After all, Alexander's great teacher Aristotle showed him Homer's *Iliad* and *Odyssey*, and it seems that Alexander himself understood his life as a shuttling back and forth between man and god, the individual and the world, and the natural **22** and the unnatural.

19

- A) NO CHANGE
- B) As he
- C) Although he
- D) Moreover, he

20

Which of the following alternatives to the underlined portion would NOT be acceptable?

- A) an unparalleled
- B) a pioneering
- C) an ahistorical
- D) a never before seen

21

Which of the following is the most effective way to combine these two sentences?

- A) thrive; it is
- B) thrive, is
- C) thrive. It's
- D) thrive and is

- A) NO CHANGE
- B) versus
- C) from
- D) but

The Great Depression's Photographer

[1]

Shortly after the First World War, Walker Evans, a young grad school dropout, happened upon¹ some like-minded artists and thinkers in Paris and New York City. Evans took

up photography in 1928, his² photos were soon featured in the pages of some of the major literary landmarks of the day. [A] Before long, Evans realized that he would rather be

a photographer than³ a writer or a stockbroker, his day job

until the early 1930s. Even so,⁴ Evans began to take more journalistic assignments, traveling around the country and

1. Which choice most strongly emphasizes that Walker Evans found his new group of colleagues largely by accident?
 - A. NO CHANGE
 - B. basically knew
 - C. finally found
 - D. sought out
2. F. NO CHANGE
 G. 1928 his
 H. 1928 and his
 J. 1928. His
3. A. NO CHANGE
 B. then
 C. yet
 D. if
4. F. NO CHANGE
 G. In other words,
 H. To that end,
 J. On the one hand,

once to Cuba. [B] In Cuba, he was the main photographer. For⁵
a book on the revolt against then-dictator Gerardo Machado.

[2]

The real work of Evans's life started during the Great Depression with Roosevelt's New Deal. [C] Evans worked specifically for the Farm Security Administration (FSA), an organization created to promote "rural rehabilitation" through economic improvement. Evans was sent to the rural South, where he began to photograph the subjects for which he is⁶
best known.

[3]

In the rural South, Evans observed farmers and migrant workers hard at work. Together with the writer James Agee, Evans toured the South and gave some of the first truly sympathetic portraits of those who had seemingly been forgotten by the march of progress. [D] In these innovative portraits, Evans subject's⁷ were shown with a new kind of

dignity. The subjects will not,⁸ for example, be the faceless poor of the nineteenth century. They would instead be real people suffering from the same social and economic stresses

as the rest of the struggling nation. 9

5. **A.** NO CHANGE
B. photographer; for
C. photographer for
D. photographer. So that

6. **F.** NO CHANGE
G. then
H. over where
J. in the place which

7. **A.** NO CHANGE
B. Evans subjects
C. Evans's subjects
D. Evans's subject's

8. **F.** NO CHANGE
G. subjects, not
H. subjects have not,
J. subjects would not,

9. If the writer were to delete the preceding sentence, the paragraph would primarily lose:
- A.** the idea that some in the nation were struggling and others were not.
B. a suggestion as to why Walker Evans's photographs of the rural poor distressed him.
C. the implication that Walker Evans's depictions were actually very similar to those of the nineteenth century.
D. a description of one way in which Evans's depictions of the poor were different from earlier ones.

Published in layers of photographic prose, *Let Us Now Praise Famous Men* was Evans's and Agee's book in 1941.

The photos from this book influenced many visual styles of the era. ¹¹ Even today, it's tough to find someone

whose never seen Evans's "Migrant Mother" or some of his other famous portraits. ¹² These portraits have helped shape how many people understand the Great Depression. ¹³

Question 14 asks about the preceding passage as a whole.

14. Upon reviewing the essay and finding that some information has been left out, the writer composes the following sentence incorporating that information:

This economic plan funded some of our greatest works of art as well as some of our most impressive industrial feats.

If the writer were to add this sentence to the essay, it would most logically be at Point:

- F. A in Paragraph 1.
- G. B in Paragraph 1.
- H. C in Paragraph 2.
- J. D in Paragraph 3.

his other famous portraits. ¹³ These portraits have helped shape how many people understand the Great Depression.

13

- 10. F. NO CHANGE
- G. By writing a book in photographs and prose, Evans and Agee in 1941 published a book *Let Us Now Praise Famous Men*.
- H. *Let Us Now Praise Famous Men* was published in 1941 and layered Evans's photographs with Agee's experimental prose.
- J. Evans and Agee called it *Let us Now Praise Famous Men*, a book they both photographed and wrote in prose in 1941.

11. At this point, the writer is considering adding the following accurate information:

from film noir to social-realist painting.

Should the writer make the addition here?

- A. Yes, because it gives specific examples of the idea presented in the sentence.
 - B. Yes, because it helps to show how Walker Evans became famous in the movies.
 - C. No, because it is unrelated to the paragraph's main point about rural poverty.
 - D. No, because the essay works more with general claims than with detailed statements.
12. F. NO CHANGE
- G. whos
 - H. who's
 - J. whos'
13. Given that all the choices are true, which one most logically concludes the paragraph?
- A. NO CHANGE
 - B. The MoMA's 1938 exhibit *Walker Evans: American Photographs* was the museum's first ever devoted to a single photographer.
 - C. Walker Evans has been criticized some for making the lives of the poor seem hopeless and inescapable.
 - D. James Agee wrote some important film reviews, so he worked in a visual medium sometimes, too.

13. Given that all the choices are true, which one most logically concludes the paragraph?

- A. NO CHANGE
- B. The MoMA's 1938 exhibit *Walker Evans: American Photographs* was the museum's first ever devoted to a single photographer.
- C. Walker Evans has been criticized some for making the lives of the poor seem hopeless and inescapable.
- D. James Agee wrote some important film reviews, so he worked in a visual medium sometimes, too.

5. On a map, $\frac{1}{3}$ centimeter represents 5 kilometers. How many centimeters on this map represent 200 kilometers?

A. $\frac{1}{5}$

B. $1\frac{2}{3}$

C. $13\frac{1}{3}$

D. 40

E. $66\frac{2}{3}$

15. What is the positive solution to the equation $9y^2 = 20$?

A. $\sqrt{\frac{20}{9}}$

B. $\left(\frac{20}{9}\right)^2$

C. $\frac{20}{9}$

D. $\frac{\sqrt{20}}{9}$

E. $\sqrt{\frac{9}{20}}$

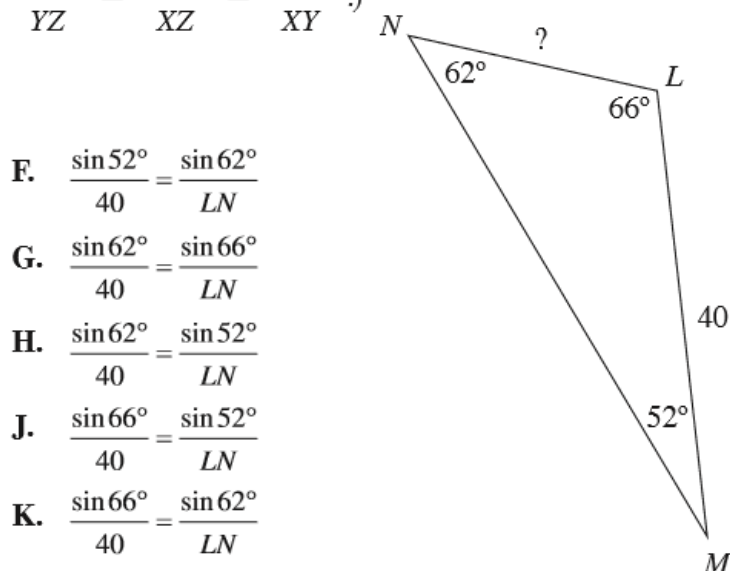
Medical residents at Lakewood Hospital are choosing their individual specialties. Among them, 40% choose cardiology, 16% choose oncology, 34% choose endocrinology, and the remaining $x\%$ choose hematology. Once the doctors pick their first specialty, they are then each asked to choose a second specialty from the previous four options in case their original specialty is already filled. They may not pick their original specialty again. 20% of those who originally picked cardiology choose oncology as their second choice. If no other field chooses oncology as their second choice, and the hospital boasts 200 medical residents, then what is the total number of residents who named oncology as either their first or second choice, in terms of x ?

- A) $8x - 128$
 B) $8x - 144$
 C) $x^2 + 24x - 188$
 D) $x^2 - 24x + 188$

40. For $\triangle LMN$ shown below, the length of \overline{LM} is 40 inches. Which of the following equations, when solved, will give the length, in inches, of \overline{LN} ?

(Note: The law of sines states that given $\triangle XYZ$,

$$\frac{\sin X}{YZ} = \frac{\sin Y}{XZ} = \frac{\sin Z}{XY}.)$$



- F. $\frac{\sin 52^\circ}{40} = \frac{\sin 62^\circ}{LN}$
 G. $\frac{\sin 62^\circ}{40} = \frac{\sin 66^\circ}{LN}$
 H. $\frac{\sin 62^\circ}{40} = \frac{\sin 52^\circ}{LN}$
 J. $\frac{\sin 66^\circ}{40} = \frac{\sin 52^\circ}{LN}$
 K. $\frac{\sin 66^\circ}{40} = \frac{\sin 62^\circ}{LN}$

(No Calculator for #9, 14,16, 18)

9

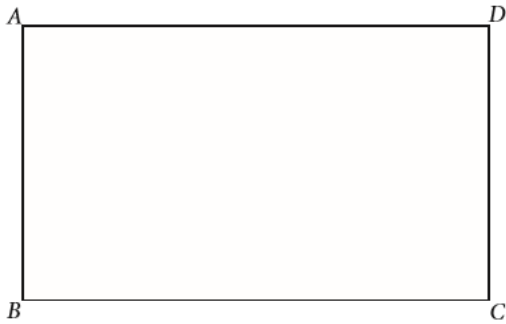
A dental hygiene company is creating a new 24-ounce tube of toothpaste by combining its most popular toothpastes, Cavity Crusher and Bad Breath Obliterator. Cavity Crusher contains 0.25% of sodium fluoride as its active ingredient, and Bad Breath Obliterator contains 0.30% of triclosan as its active ingredient for a total of 0.132 ounces of active ingredients in both toothpastes. Solving which of the following systems of equations yields the number of ounces of Cavity Crusher, c , and the number of ounces of Bad Breath Obliterator, b , that are in the new toothpaste?

A) $c + b = 0.132$
 $0.25c + 0.3b = 24$

B) $c + b = 24$
 $0.0025c + 0.003b = 0.132$

C) $c + b = 24$
 $0.025c + 0.03b = 0.132$

D) $c + b = 24$
 $0.25c + 0.3b = 0.132$



If rectangle $ABCD$ has an area of 324 and the tangent of $\angle BCA$ (not shown) is $\frac{4}{9}$, then which of the following is closest to the length of \overline{BD} (not shown)?

- A) 9.8
- B) 27
- C) 29.5
- D) It cannot be determined from the given information.

A group of students at Omega High School are using staples and popsicle sticks to build a scale model of the Great Wall of China as part of a project detailing China's military history. The number of staples the students will need is three times the number of popsicle sticks they will need. If the students determine they need 84 staples for this particular project, how many popsicle sticks will they need?

The parabola $y = -x^2 + 5x + 6$ is intersected by line $y = -\frac{1}{2}x + 12$. What is the y -coordinate of the intersection closest to the x -axis?

55. Rectangle $ABCD$ lies in the standard (x,y) coordinate plane with corners at $A(4,2)$, $B(6,-1)$, $C(1,-4)$, and $D(-1,-1)$, and is represented by the 2×4 matrix $\begin{bmatrix} 4 & 6 & 1 & -1 \\ 2 & -1 & -4 & -1 \end{bmatrix}$. $ABCD$ is then translated, with the corners of the translated rectangle represented by the matrix $\begin{bmatrix} 1 & 3 & -2 & -4 \\ n & -3 & -6 & -3 \end{bmatrix}$. What is the value of n ?

- A. 0
- B. -1
- C. -2
- D. -3
- E. -4

35.

What is the value of a if $\log_4 a = 3$?

- A. 120
- B. 64
- C. 12
- D. $\sqrt[4]{3}$
- E. $4\sqrt{3}$

Essay Writing and Analysis

3D Printing

3D printers, which allow people to easily print 3-dimensional objects at home, become more affordable every year. Currently, many industrial corporations use them to print machine parts, construction materials, and clothing. The medical field has embraced the technology, using it to create advanced, inexpensive prosthetics. As the technology becomes cheaper, more people have access to 3D printers at home. Could there be downsides to giving a private individual the technology to print any object he or she desires? The rise of affordable 3D printers could cause a change in society comparable to the Industrial Revolution. As such, an analysis of ramifications of such a dramatic shift in the means of production should be conducted.

Read and carefully consider these perspectives. Each suggests a particular way of thinking about the increasing presence of public written communication.

Perspective One

The increasing prevalence of 3D printing will cost many people their jobs. Without the need for large-scale manufacturing, factories will close their doors for good. The economic cost of 3D printing is will do harm to the livelihood of many people.

Perspective Two

One of the industrial applications for 3D printing has been the rapid creation of prototypes, which accelerates the creative process. Putting this technology in the hands of all people will lead to greater innovation, which will push society forward.

Perspective Three

Allowing all manufacturing to be done in the home will dramatically reshape our economic system, and with it, all of human society. This is a good thing, because it pushes us towards a world of new, unimagined possibilities.

Essay Task

Write a unified, coherent essay in which you evaluate multiple perspectives on the question of 3D printing. In your essay, be sure to:

- analyze and evaluate the perspectives given
- state and develop your own perspective on the issue
- explain the relationship between your perspective and those given

Your perspective may be in full agreement with any of the others, in partial agreement, or wholly different. Whatever the case, support your ideas with logical reasoning and detailed, persuasive examples.

Planning Your Essay

Your work on these prewriting pages will not be scored.

Use the space below and on the back cover to generate ideas and plan your essay. You may wish to consider the following as you think critically about the task:

Strengths and weaknesses of the three given perspectives

- What insights do they offer, and what do they fail to consider?
- Why might they be persuasive to others, or why might they fail to persuade?

Your own knowledge, experience, and values

- What is your perspective on this issue, and what are its strengths and weaknesses?
- How will you support your perspective in your essay?

SAT Practice Essay #1

ESSAY BOOK

DIRECTIONS

The essay gives you an opportunity to show how effectively you can read and comprehend a passage and write an essay analyzing the passage. In your essay you should demonstrate that you have read the passage carefully, present a clear and logical analysis, and use language precisely.

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

You have 50 minutes to read the passage and write an essay in response to the prompt provided inside this booklet.

REMINDER

- Do not write your essay in this booklet. Only what you write on the lined pages of your answer booklet will be evaluated.
- An off-topic essay will not be evaluated.

As you read the passage below, consider how the author uses

- evidence, such as facts or examples, to support claims.
- reasoning to develop ideas and to connect claims and evidence.
- stylistic or persuasive elements, such as word choice or appeals to emotion, to add power to the ideas expressed.

“Robert Redford: Protect our wild horses” by Robert Redford, published in *USA Today*, November 3, 2014.

- 1 Horses and I have had a shared existence, personal and professional, for as long as I can remember. And while I carry a strong passion for all horses, my tenacious support for the preservation of habitat for wildlife and the American mustangs derives from their symbolic representation of our national heritage and freedom.
- 2 Any infringement on their legally protected right to live freely is an assault on America’s principles. The varied and subjective interpretation of laws intended to protect these animals on our public lands, continues to leave wild horses under attack.
- 3 Recent “stand-offs” between ranchers and the federal government are reminiscent of old westerns. But this American tragedy does not have a hero riding in to save the day, and wild horses have become the victim in the controversies over our public land resources.
- 4 In 1971, as a result of concern for America’s dwindling wild horse populations, the US Congress passed the Wild Free Roaming Horse and Burro Act. The act mandated that the Bureau of Land Management (BLM), protect free roaming wild horses and burros, under a multiple use management policy, on designated areas of our public lands.
- 5 The BLM manages 245 million acres of our public lands, with livestock grazing permits on 155 million acres. Wild horses are designated to share a mere 26.9 million acres. That means only 17 percent of BLM-managed public land is made available to wild horses. Wild horse populations vary between 32,000 and 50,000, while livestock grazing allocations accommodate numbers in the millions. Yes, in the millions.
- 6 Advocates are only asking that the horses be treated fairly. Wild horses are consistently targeted as the primary cause of negative impact to grazing lands resulting from decades of propaganda that ignores math, science and solutions that can be implemented today.
- 7 Ranchers hold nearly 18,000 grazing lease permits on BLM land alone. Grazing costs on BLM land go for \$1.35 per cow and calf pair, well below the market rate of \$16. This price disparity derived from BLM’s current permit policy establishes an uneven playing field on grazing economies. Understandably, ranchers have a vested interest in maintaining the status quo.

- 8 Although less than 3 percent of America's beef is produced on federal land, this subsidized grazing program costs the taxpayer more than \$123 million dollars a year, and more than \$500 million when indirect costs are accounted for.
- 9 The long-term economic success of public lands lies in maintaining a bio-diverse ecosystem within its boundaries. However, understanding the need for a preservation balance in thriving agricultural communities often becomes sidelined.
- 10 The BLM needs to comply with its original "multiple use" principle in managing wild horses and burros. In light of the inequitable share of livestock on BLM land, the ongoing persecution of wild horses and those that value them is unacceptable and threatens the very spirit of the American West. I urge Congress to stand up for much needed reform of the BLM's wild horse and burro program and livestock grazing on federal lands.
- 11 Now is not the time to repudiate environmental balance, but rather it is the time for all of us to work together—politician, advocate, rancher, scientist, and citizen. Only by doing this will the United States move forward and be a leader in environmental issues and ensure sustainability to our delicate ecosystem.

Write an essay in which you explain how Robert Redford builds an argument to convince Congress to do more to protect wild horses. In your essay, analyze how Redford uses one or more of the features listed above (or features of your own choice) to strengthen the logic and persuasiveness of his argument. Be sure that your analysis focuses on the most relevant aspects of the passage.

Your essay should not explain whether you agree with Redford's claims, but rather explain how the author builds an argument to persuade his audience.