

SHSAT PRACTICE TEST # 19

GRADE 8

A

The New York City Department of Education
Mock 5 Specialized High School Admissions Test

GENERAL DIRECTIONS

Student Name: _____

Identifying Information

Turn to Side 1 of the answer sheet.

Notify the proctor immediately if you are ill or should not be taking this test. Do not sign the statement or begin the test. Return your answer sheet to the proctor.

Line 1: Read the statement and sign your name in the space following the word "signature." Do not print your name.

Line 2: Print today's date, using the numbers of the month, the day, and the year.

Line 3: Print your birth date with the number of the month first, then the number of the day, then the last two digits of the year. For example, a birth date of March 1, 2005, would be 3-1-05.

Grid 4: Print the letters of your first name, or as many as will fit, in the boxes. Write your name exactly as you did on the application. If you have a middle initial, print it in the box labeled "MI." Then print the letters of your last name, or as much as will fit, in the boxes provided. Below each box, fill in the circle that contains the same letter as the box. If there is a space or a hyphen in your name, fill in the circle under the appropriate blank or hyphen.

Make dark marks that completely fill the circles. If you change a mark, be sure to erase the first mark completely.

Grid 5: Carefully copy the order in which you ranked the specialized high schools on your Test Ticket onto Grid 5. If Grid 5 is not marked correctly, your admission to a specialized high school will be affected because your admission is based on the score you achieve and the order in which you rank your school preferences in this grid. The school choices indicated on your answer sheet are final.

Fill in one and only one circle for each school for which you wish to be considered. You may make as few as one or as many as eight choices. To increase your chances of being assigned to one of the specialized high schools, you are encouraged to make more than one choice. You **must** fill in a first choice school. Do not fill in a school more than once. Do not fill in the same school for each choice. Fill in only one circle in a row and only one circle in a column.

Grid 6: Complete the grid with your date of birth. Print the first three letters of the month in the first box, the number of the day in the next box, and the year in the last box. Then fill in the corresponding circles.

Grid 7:

1. Print the name of the school where you are now enrolled in the space at the top of the grid.
2. In the boxes marked "SCHOOL CODE," print the six-digit code that identifies your school and fill in the circle under the corresponding number or letter for each digit of the school code. (You can find your school code on your Test Ticket. If it is not there, tell the proctor, and the proctor will get the school code for you.)
3. If you attend a private or parochial school, fill in the circle marked "P."

Grid 8: Print your student ID number in Grid 8. You can find your student ID number on your Test Ticket. In the boxes, print your nine-digit student ID number. Below each box, fill in the circle containing the same number as in the box.

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UNTIL YOU ARE TOLD TO DO SO.
TURN YOUR BOOKLET OVER TO THE BACK COVER.**

START SHSAT PREP

GENERAL DIRECTIONS, continued

Identifying Information, continued

Grid 9: In most cases, Grid 9 is already filled in for you. If it is not, copy the letter and numbers shown in the upper-right corner of your test booklet into the boxes. Below each box, fill in the circle containing the same letter or number as the box.

Now review Side 1 to make sure you have completed all lines and grids correctly. Review each column to see that the filled-in circles correspond to the letters or numbers in the boxes above them.

Turn your answer sheet to Side 2. Print your test booklet letter and numbers, and your name, first name **first**, in the spaces provided.

Marking Your Answers

Mark each of your answers on the answer sheet in the row of circles corresponding to the question number printed in the test booklet. Use only a Number 2 pencil. If you change an answer, be sure to erase it completely. Be careful to avoid making any stray pencil marks on your answer sheet. Each question has only one correct answer. If you mark more than one circle in any answer row, that question will be scored as incorrect.

SAMPLE ANSWER MARKS					
(A)	(B)	(C)	●	RIGHT	
(A)	(B)	(C)	(D)	WRONG	
(A)	(B)	(C)	(D)	WRONG	
(A)	(B)	●	(D)	WRONG	
(A)	(B)	●	●	WRONG	

You can use your test booklet or the provided scrap paper to take notes or solve questions; however, your answers must be recorded on the answer sheet in order to be counted. **You will not be able to mark your answers on the answer sheet after time is up, and answers left in the test booklet will not be scored.**

DO NOT MAKE ANY MARKS ON YOUR ANSWER SHEET OTHER THAN FILLING IN YOUR ANSWER CHOICES.

Planning Your Time

You have 180 minutes to complete the entire test. **How you allot the time between the English Language Arts and Mathematics sections is up to you.** If you begin with the English Language Arts section, you may go on to the Mathematics section as soon as you are ready. Likewise, if you begin with the Mathematics section, you may go on to the English Language Arts section as soon as you are ready. If you complete the test before the allotted time (180 minutes) is over, you may go back to review questions in either section.

Be sure to read the directions for each section carefully. Each question has only one correct answer. Choose the best answer for each question. When you finish a question, go on to the next, until you have completed the last question. Your score is determined by the number of questions you answer correctly. **Answer every question, even if you may not be certain which answer is correct.** Don't spend too much time on a difficult question. Come back to it later if you have time. If time remains, you should check your answers.

Students must stay for the entire test session.

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5 A B C D E Printed in the USA ISD32507

START SHSAT PREP

SAMPLE TEST, FORM A
PART 1 — ENGLISH LANGUAGE ARTS
57 QUESTIONS

REVISING/EDITING

QUESTIONS 1-15 (PART A AND PART B)

REVISING/EDITING PART A

DIRECTIONS: Read and answer the following questions. You will be asked to recognize and correct errors so that the sentences or short paragraphs follow the conventions of standard written English. You may write in your test booklet as needed to take notes. You should reread relevant parts of the sentences or paragraphs, while being mindful of time, before marking the best answer for each question.

1. Which is the best way to combine the following sentences to clarify the relationship between the ideas?

- (1) The Great Wall of China was built over several centuries.
(2) The wall was constructed to protect Chinese states from invasions.
- A. The Great Wall of China, built over several centuries, was constructed to protect Chinese states from invasions.
B. Although the Great Wall of China was built over several centuries, it was constructed to protect Chinese states from invasions.
C. The Great Wall of China was built over several centuries, and its purpose was to protect Chinese states from invasions.
D. The Great Wall of China, which was built over several centuries, served the purpose of protecting Chinese states from invasions.

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2. Which revision corrects the error in sentence structure in the paragraph?

The foods and beverages that people consume have a profound impact on their health. The scientific connection between food and health has been well documented for many decades, substantial and increasingly robust evidence showing that a healthy lifestyle—including following a healthy dietary pattern—can help people achieve and maintain good health and reduce the risk of chronic diseases throughout all stages of the lifespan... The core elements of a healthy dietary pattern are remarkably consistent across the lifespan and across health outcomes.

(from

https://www.dietaryguidelines.gov/sites/default/files/2020-12/Dietary_Guidelines_for_Americans_2020-2025.pdf)

- E. decades, with substantial
- F. health, and the
- G. lifestyle, which includes
- H. pattern that are

3. Read this sentence.

The United States is a big country with people from all over the world.

Which revision of the sentence uses the most precise language?

- A. The United States is a massive country that is extremely racially and ethnically diverse.
 - B. The United States has over 300 million people and they come from countries in every continent except Antarctica.
 - C. With a population of 329.5 million, the United States is the world's most racially and ethnically diverse country; it has inhabitants from every populated country in the world.
 - D. The United States' population of 329.5 million people is extremely diverse in race and origin.
4. Which edit should be made to correct this sentence?

In 1915 the Russian painter Kasimir Malevich created what is widely considered to be the world's first abstract painting: an image of a black square.

- E. Insert a comma after **1915**.
- F. insert a comma after **painter**.
- G. Insert a comma after **widely**.
- H. Insert a comma after **image**.

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REVISING/EDITING PART B

DIRECTIONS: Read each of the following two texts and answer the related questions. You will be asked to improve the writing quality of each text and to correct errors so that the texts follow the conventions of standard written English. You should reread relevant parts of each text, while being mindful of time, before marking the best answer for each question.

The Dancing Plague of 1518

by Ned Pennant-Rea, excerpt

(1) On a stage at a European market, lots of people dance to instruments. (2) The July sun beats down upon them as they hop from leg to leg, spin in circles and whoop loudly. (3) From a distance they look like they might be dancing at a festival. (4) But a closer look reveals a more disturbing scene. (5) Their arms are flailing and their bodies are shaking and convulsing. (6) Ragged clothes and pinched faces are soaked with sweat. (7) Their eyes are glassy, distant. (8) Far from enjoying themselves, these people are “choreomaniacs”, people who cannot stop dancing.

(9) In full view of the public, this is the height of the choreomania crisis that gripped Strasbourg for a month in the summer of 1518. (10) Also known as the “dancing plague”, it was the most fatal and best documented of the more than ten such outbreaks which happened along the Rhine and Moselle rivers since 1374.

(11) The physician and alchemist Paracelsus visited Strasbourg eight years after the plague and became fascinated by its causes. (12) Paracelsus is best known for advocating for observation as a crucial part of medicine. (13) According to him, it all started with one woman. (14) Mrs. Troffea had started dancing on July 14th on the narrow cobbled street outside her home. (15) As far as we can tell, she had no musical accompaniment but simply “began to dance”. (16) Ignoring her husband’s pleas to stop, she continued for hours, until the sky turned black and she collapsed in a twitching heap of exhaustion. (17) The next morning she was up again on her swollen feet and dancing before her thirst and hunger could register. (18) By the third day, massive crowds began gathering to watch the spectacle.

From: <https://publicdomainreview.org/essay/the-dancing-plague-of-1518>

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6. Which revision of sentence uses the most precise language?
- E. On a quickly built stage before the busy horse market of Strasbourg, Germany, dozens of people dance to pipes, drums, and horns.
 - F. On a stage at a special German market, many people dance to different kinds of instruments including pipes, drums, and horns.
 - G. On a stage at a German horse market, people dance different kinds of dances to many different musical instruments that were common at the time.
 - H. On a quickly built stage before the busy horse market of Strasbourg, Germany, people are doing lots of different dances that are accompanied by instruments.
7. Which sentence should be placed before sentence 11 to provide a transition to the next paragraph?
- A. Accounts of these bizarre events are scattered across documents written at the time and in later decades and centuries.
 - B. The least fatal of these outbreaks had happened during the previous year in a bigger German city, Heidelberg.
 - C. Many local people believed that the plague was caused by demonic position, and they called doctors and priests to try to treat the choreomaniacs.
 - D. Certain peculiar individuals came to Strasbourg to try to study the plague.
8. Which sentence is least relevant to the ideas presented in the last paragraph (sentences 11–18) and should be deleted?
- E. sentence 16
 - F. sentence 12
 - G. sentence 11
 - H. sentence 18

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9. Which of these would best follow sentence 18 and support the ideas presented in the last paragraph (sentences 11–18)?
- A. Paracelsus' history of the Strasbourg plagues was controversial and decried by local officials and clergymen.
 - B. However, Paracelsus decided that the incident was too dangerous to write or speak about, and he never shared his observations during his lifetime.
 - C. Paracelsus was one of those who saw Mrs. Troffea dance, and he tried to help cure her.
 - D. Paracelsus' gripping and widely read account of the plague brought the outbreak to national attention.
10. This excerpt would most likely be followed by a(n)
- E. detailed biography of Paracelsus' life and various achievements in scholarship and medicine.
 - F. discussion of these outbreaks' relevance to modern times and what lessons they can teach us.
 - G. glossary of unfamiliar words and terms and a bibliography of the different sources cited.
 - H. overview of the rest of the events of the plague and other sources who wrote about it.

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The Language of Flowers: An Alphabet of Floral Emblems (1857)

(1) The Victorian interest in **botany** went hand in hand with the Victorian interest in the “language of flowers”. (2) At a time when many feelings were discouraged and repressed, flowers, whether sent singly or in complicated arrangements, communicated the incommunicable.

(3) As we learn in this sumptuously illustrated Alphabet of Floral Emblems, the carnation represents fascination, the geranium gentility, the dahlia instability. (4) Some of the associations between feelings and flowers persist today. (5) The rose, of course, represents love. (6) But were you aware that a deep red rose represents “bashful shame”? (7) Or that a gum cistus — or gum rockrose, as it’s more often called today — says to the recipient “I shall die to-morrow” (a line from the lovelorn ballad “Barbara Allen”)?

(8) The book contains a kind of dual-language dictionary of flowers and their meanings, alphabetically arranged first by floral name and then by the emotion or message they convey. (9) It also offers up a selection of poems — mostly by long-forgotten poets such as C. A. Fillebrown, Miss J. A. Fletcher, and John Kenyon — which supplement these more straightforward meanings and hint at the level of complexity the floral language can achieve. (10) “For example”, says the writer of the book’s introduction:

(11) if a flower be given reversed, it implies the opposite of that thought or sentiment which it is ordinarily understood to express: again, a rosebud from which the thorns have been removed, but which has still its leaves, conveys the sentiment, ‘I fear, but I hope,’—the thorns implying fear, as the leaves hope; remove the leaves and thorns, and then it signifies that ‘There may be neither hope nor fear’; while again, a single flower may be made emblematical of a variety of ideas; a rosebud that has been already used and deprived of its thorns, says, ‘There is much to hope,’ but stript of its leaves also, it tells, ‘There is everything to fear.’

(12) Imagine how a simple walk in a garden might be transformed by this sensitivity to every flower’s every meaning. (13) One can almost see how, not so long ago, the nosegay might “be made to take the place of more formal **epistles**”.

(14) There were, of course, other books dedicated to the theme, with some variations on flower meanings but many remaining the same. (15) The earliest we have found is published in New York in 1834, which, alongside the flower meanings, offers up relevant couplets.

botany: the scientific study of plants

epistle: a letter

(from <https://publicdomainreview.org/collection/the-language-of-flowers-an-alphabet-of-floral-emblems-1857/>)

START SHSAT PREP

11. Which of the following sentences from the passage is its topic sentence?

- A. sentence 2
- B. sentence 8
- C. sentence 12
- D. sentence 14

12. Which sentence could best follow sentence 7 to support the use of floral examples in the second paragraph (sentences 3–7)?

- E. Scholars believe that the symbolic meanings of flowers have ancient origins; it was in the Mesopotamian era that this delicate art blossomed into a refined and elaborate practice.
- F. A recent study found that even today, people unconsciously associate certain flowers with emotions, though few are aware of the rich history behind these meanings.
- G. This Victorian-era book carefully documented these floral meanings, enabling individuals to compose bouquets that spoke in whispers of love, sorrow, and hope.
- H. In contrast, the modern practice of giving flowers is often guided by personal preference, with choices made more for their color and fragrance than for the messages they might convey.

13. Which sentence contains a grammatical error that needs to be revised?

- A. sentence 2
- B. sentence 3
- C. sentence 8
- D. sentence 9

14. Which sentence contains an error in verb tense?

- E. sentence 8
- F. sentence 9
- G. sentence 12
- H. sentence 15

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READING COMPREHENSION

QUESTIONS 16–57

DIRECTIONS: Read each of the following five texts, and answer the related questions. You may write in your test booklet as needed to take notes. You should reread relevant parts of each text, while being mindful of time, before marking the best answer for each question. Base your answers only on the content within the text.

CONTINUE TO THE NEXT PAGE —>

START SHSAT PREP

American Life Histories: Manuscripts from the Federal Writers' Project

(1) During the Great Depression of the 1930s, when as many as one out of four Americans could not find jobs, the federal government stepped in to become the employer of last resort. The Works Progress Administration (WPA), an ambitious New Deal program, put 8,500,000 jobless to work, mostly on projects that required manual labor. With Uncle Sam meeting the payroll, countless bridges, highways and parks were constructed or repaired.

(2) The WPA included a provision for unemployed artists and writers: the Federal Arts Projects. If they were poor enough to qualify, musicians, actors, directors, painters and writers could work directly for the government. The New Deal arts projects made a lasting impact on American cultural life and none contributed more than the Federal Writers' Project. At its peak, the Writers' Project employed about 6,500 men and women around the country, paying them a subsistence wage of about \$20 a week.

(3) The Writers' Project provided jobs for a diverse assortment of unemployed white-collar workers including beginning and experienced writers—those who had always been poor and the newly down and out. Among those Federal Writers who went on to gain national literary reputations were Saul Bellow, John Cheever, Ralph Ellison, Zora Neale Hurston, and Richard Wright.

(4) During the Project's early years, the Federal Writers produced a series of state guidebooks that offer a flavorful sampling of life in the United States. Now considered classic Americana, these guides remain the Project's best-known undertaking; many have been reissued in the past decade. But the Project also left a hidden legacy. In the late 1930s, Federal Writers recorded the life stories of more than 10,000 men and women from a variety of regions, occupations and ethnic groups.

(5) People who told stories of life and work during the 1930s include an Irish maid from Massachusetts, a woman who worked in a North Carolina textile mill, a Scandinavian ironworker, a Vermont farm wife, an African-American worker in a Chicago meat packing house, and a clerk in Macy's department store.

(6) Many Americans in the thirties remembered the nineteenth century as vividly as some people now recall the Depression years. The life history narratives tell of meeting Billy the Kid, surviving the Chicago fire of 1871, making the pioneer journey to the Western Territories, and fleeing to America to avoid conscription into the Russian Czar's army.

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(7) These accounts were meant to be published in a series of anthologies that would form a mosaic portrait of everyday American life. There were projected volumes on granite carvers, Western pioneers and tobacco workers, among others. But by the end of the Depression, the New Deal arts projects were under attack by congressional red-baiters. Following America's entry into World War II, the Writers' Project came to a halt. A vast store of unpublished material was housed in the Library of Congress and was overlooked until recently.

(8) This collection of life histories does not include photographs of the individuals who told their stories. In order to illustrate the narratives in this interpretive program, we have reproduced portraits of other individuals taken during the same time period, identified as "surrogate images."

(9) Most life histories were gathered under the direction of Benjamin A. Botkin, the folklore editor of the Writers' Project. Like many intellectuals of his generation, Botkin was horrified at the rise of fascism in Europe and worried it might spread at home. By assembling occupationally and ethnically diverse life histories, he hoped to foster the tolerance necessary for a democratic, pluralistic community.

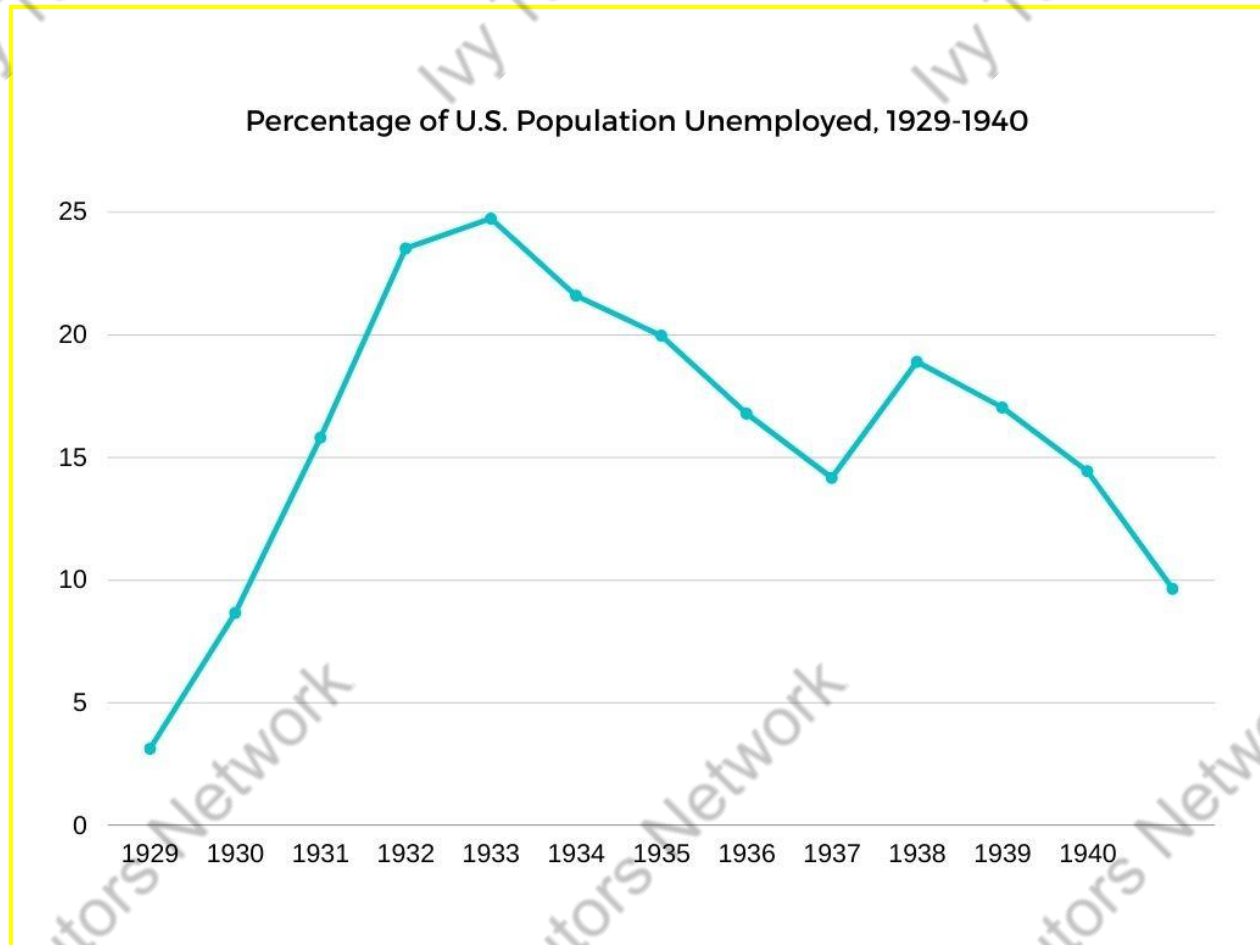
(10) Although Federal Writers were not supposed to do their own creative work on Project time, many found that the Project experience offered considerably more than a meal ticket. Botkin regarded the life history narratives as "the stuff of literature" and he expected Federal Writers to draw on them as raw material. No fan of "ivory tower writing," he shared the desire of literary realists to move "the streets, the stockyards, and the hiring halls into literature."

(11) Federal Writers learned from the act of collecting narratives as well as from the stories themselves. The life history interviews were conducted before the days of tape recorders, so the stories had to be reconstructed from notes and memory. Botkin encouraged Federal Writers to listen for characteristic speech patterns and vernacular language.

(12) In his Writers' Project interviews, Ralph Ellison began to experiment with ways of capturing the sound of black speech that he refined in his novel *Invisible Man*. "I tried to use my ear for dialogue to give an impression of just how people sounded. I developed a technique of transcribing that captured the idiom rather than trying to convey the dialect through misspellings."

Source: <https://www.loc.gov/collections/federal-writers-project/articles-and-essays/introduction>

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16. Which paragraph uses personification?

- E. Paragraph 6
- F. Paragraph 12
- G. Paragraph 5
- H. Paragraph 1

17. According to the passage, 'surrogate images' are most closely analogous to

- A. book illustrations.
- B. photojournalism.
- C. paparazzi pictures.
- D. professional headshots.

START SHSAT PREP

18. What is the most likely explanation for why the author published this essay?

- E. To position an unfairly neglected body of work in its rightful place in history.
- F. To provide the public with a brief overview of the history of the Writers' Project.
- G. To introduce the public to the Writers' Project collection of life stories.
- H. To celebrate and honor the influential Writers who participated in the Project.

19. Which of the following statements would Botkin most likely agree with?

- A. Because of its diversity, America probably would never become a fascist country.
- B. Being interviewed can help people process traumatic life events in a healthy way.
- C. The government should not play a role in shaping citizens' private beliefs.
- D. Learning about other peoples' lives can change our political beliefs.

20. According to the passage, the Federal Writers' Project

- E. had a lasting influence on public funding projects.
- F. convinced everyday Americans about the importance of the arts.
- G. helped writers survive and improved their writing.
- H. succeeded in shaping the civic attitudes necessary for democracy.

21. What is the purpose of paragraphs 5 and 6?

- A. To show that the Project's participants were similar to people today.
- B. To present brief historical facts in the form of anecdotes.
- C. To provide some unusual details that can entertain the reader.
- D. To show how interesting and varied the Projects' contents are.

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The Tea Ceremony

(1) Tea has a long history of medicinal use in India and China, where it was used to relieve drowsiness and thus aid the meditation of Buddhist monks. A monk studying in China brought the first tea to Japan some time before A.D. 729—the first recorded use of tea in that country. In 1191, tea drinking in Japan was further encouraged by Yaesai, a Zen master who brought new tea seeds from China. Yaesai treated the tea plant as a sacred remedy and an aid to religious experience. His writings contain the outline of what has become known as the “tea ceremony.”

(2) According to some sources, by the fourteenth century, the Japanese nobility were practicing a quite different social activity associated with tea drinking—the tea tournament. Reminiscent of modern-day wine-tasting events, tea tournaments involved tasting bowls of tea from different areas and guessing the origin of each. This version of tea drinking was far removed from the earlier connection with religious activity.

(3) The next important development in the tea ceremony occurred during the fifteenth century. Then, a retired Japanese military leader, or shogun, built the Silver Pavilion, where he spent the rest of his life perfecting the arts and rituals of the ceremony. By that time the tea ceremony had become an essential part of the cultural life of Japan. Perhaps the ceremony reached its pinnacle in the sixteenth century with the great tea master Rikyu, who established the rules and etiquette for the ceremony as it is still practiced today.

(4) The tea ceremony has been described as a “ritualized sequence of movements, a formal dance of significant gestures.” Two principles prevail: shibui (impeccable taste) and wabi (simplicity and absence of luxury), and the ceremony follows strict rules. The ceremony takes place in a tea room, either part of a house or a separate building in a garden. Although simple in design and lacking in pretension, tea rooms are built of the finest materials and with the most expert workmanship. Often they cost more than the house itself!

(5) The full tea ceremony has three parts and may last for four hours. The guests spend a few moments in the garden before being invited into the tea room for a light meal. After eating, they return to the garden for meditation before returning for “thick tea.” The host prepares one cup of tea, and the cup is passed from one guest to another in a series of bows and other movements. Again the guests retreat to the garden. During the third part, known as “weak tea,” a separate batch of tea is prepared for each guest. The weak tea part of the ceremony is often the only one practiced today, when tea ceremonies may be conducted to honor birthdays or other special days. Even in this shortened form, however, the tea ceremony provides busy people an opportunity for quiet reflection in a gracious setting.

Excerpt source: 2010-2011 Form A

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25. Which of the following best tells what this passage is about?

- A. tea ceremonies around the world
- B. a contrast between the tea ceremony and other Japanese traditions
- C. the development of the Japanese tea ceremony
- D. how tea came to Japan

26. What does the passage suggest about the use of tea as a medicinal cure?

- E. It was used only by members of the nobility.
- F. It was used only in Japan.
- G. It has been used in this way for centuries.
- H. Its use was considered foolish by Zen masters.

27. Read this sentence from paragraph 5:

"The tea ceremony has been described as a 'ritualized sequence of movements, a formal dance of significant gestures.'"

How does this sentence contribute to the development of ideas in the excerpt?

- A. It highlights that the tea ceremony is focused on showcasing the host's skill in performing complex movements rather than its cultural significance.
- B. It conveys that the tea ceremony's formal nature is intended to emphasize the importance of social hierarchy and proper conduct.
- C. It implies that the tea ceremony's movements are primarily designed to entertain, with little to no connection to spiritual or cultural tradition.
- D. It suggests that the tea ceremony is an intricate, structured event where every gesture is essential to its meaning and overall impact.

28. According to the passage, which of the following statements about Rikyu's tea ceremony is accurate?

- E. It was developed around the year 1200.
- F. It established rules that are still observed.
- G. It was used by Buddhist monks.
- H. It was intended only for shoguns and other aristocracy.

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29. Read this sentence from paragraph 3:

"According to some sources, by the fourteenth century, the Japanese nobility were practicing a quite different social activity associated with tea drinking—the tea tournament."

How does this sentence contribute to the development of ideas in the excerpt?

- A. It introduces the idea that tea drinking in Japan evolved from a religious practice to a more social and competitive activity among the nobility.
- B. It shows that the Japanese nobility continued to follow the original religious practices associated with tea drinking.
- C. It explains how the tea tournament became a more formal ritual that influenced the development of the tea ceremony.
- D. It emphasizes the role of the nobility in preserving traditional tea ceremonies during the fourteenth century.

30. Read this sentence from paragraph 4:

"Although simple in design and lacking in pretension, tea rooms are built of the finest materials and with the most expert workmanship."

How does this sentence contribute to the development of the idea of wabi in the tea ceremony?

- E. It emphasizes that the tea ceremony places little value on craftsmanship, focusing instead on material luxury.
- F. It highlights how the tea room reflects *wabi* by balancing simplicity with quality, showing that true elegance comes from understated beauty.
- G. It suggests that the tea ceremony is focused on creating elaborate and extravagant spaces that contradict *wabi* values.
- H. It shows that the tea room, though simple, is designed to show off the wealth and status of the host.

31. From the comments of the author, the most likely reason the tea ceremony has survived to the present day is that

- A. people still enjoy participating in tea tournaments.
- B. people again recognize the medicinal value of tea.
- C. people still use tea as an aid to religious experience.
- D. people appreciate the opportunity to be quiet and reflective.

START SHSAT PREP

If you have ever watched someone fall on the ice, you've seen slipperiness at work. But have you wondered what makes ice slippery, or why skates or skis glide across ice so easily? The answer might seem obvious: ice is smooth. Yet smoothness in itself does not explain slipperiness. Imagine, for example, skating on a smooth surface of glass or sheet metal.

- Surprisingly, scientists do not fully understand why ice is slippery. Past explanations of slipperiness have focused on friction and pressure. According to the friction theory, a skate blade rubs across the ice, causing friction. The friction produces heat, melting the ice and creating a slippery, microscopically thin layer of water for the skate to slide on. The friction theory, however, has been challenged by scientists even when the ice is completely motionless, creating no friction.

- The pressure theory suggests that pressure from a skate blade melts the ice surface, creating a slippery layer of water. The water refreezes when the pressure is lifted. Science textbooks typically cite this explanation, but many scientists disagree, claiming that the pressure effect is not great enough to melt the ice. Nor can the pressure theory explain why someone wearing flat-bottomed shoes—which have a greater surface area than skate blades and thus exert less pressure per square inch—can glide across the ice or even go sprawling.

- During the 1990s, another theory found acceptance: the thin top layer of ice is liquid, or “liquid-like,” regardless of friction or pressure. This notion was first proposed more than 150 years ago by physicist Michael Faraday. Faraday’s simple experiment illustrates this property: two ice cubes held against each other will fuse together. This happens, Faraday explained, because liquid on the cubes’ surfaces froze solid when the surfaces made contact.

Faraday’s hypothesis was overlooked, in part because scientists did not have the means to detect molecular structures.

- However, technological advances during recent decades allow scientists to measure the thin layer on the surface of the ice. For example, in 1996, a chemist at Lawrence Berkeley Laboratory shot electrons at an ice surface and recorded how they rebounded. The data suggested that the ice surface remained “liquid-like,” even at temperatures far below freezing. Scientists speculate that water molecules on the ice surface are always in motion because there is nothing above them to hold them in place. The vibration creates a slippery layer of molecules. According to this interpretation of the Lawrence Berkeley Laboratory experiments, the molecules are always in motion and they are always vibrating. Thus it could be said that people are skating on vibrating molecules!
- The phenomenon of a slippery liquid-like surface is not limited to ice, although ice is the most common example. Some crystals and even diamond crystals made of carbon, also show this property under certain temperature and pressure conditions.

45. Which of the following best tells what this passage is about?

- A. why ice surfaces are liquid-like
- B. how ice changes from a solid to a liquid
- C. answers to the question of what makes ice slippery
- D. the discoveries of Michael Faraday
- E. the processes of freezing and melting

CONTINUE ON TO THE NEXT PAGE ►

18. A one-room school has three grades—4th, 7th, and 8th. Eight students attend the school: Ann, Bob, Carla, Doug, Ed, Filomena, George, and Heidi. In each grade there are either two or three students.

- Ann, Doug, and Filomena are all in different grades.
- Bob and Ed are both in the 7th grade.
- Heidi and Carla are in the same grade.

Based only on the information above, which of the following **must** be true?

- Exactly two students are in the 8th grade.
- Carla and Doug are in the same grade.
- Exactly three students are in the 7th grade.
- Heidi and Ann are in the same grade.
- Filomena is in the 8th grade.

19. The following diagram shows the location of a red bike, a blue bike, and a green bike on a street. The street is represented by a horizontal line. The red bike is at the left end of the line. The blue bike is at the right end of the line. The green bike is between the red bike and the blue bike.

Based only on the information above, which of the following **must** be true?

- Paul's bike is green.
- The yellow bike is between the red bike and the green bike.
- Paul's bike is yellow.
- The red bike is next to the green bike.
- The color of Paul's bike cannot be determined.

20. In the town of Hestia, the millworkers are all over six feet tall. Every Hestia millworker is good at math.

Based only on the information above, which of the following **must** be true?

- At least some people in Hestia who are over six feet tall are good at math.
- At least some people in Hestia who are good at math are not millworkers.
- Anyone in Hestia who is over six feet tall works at the mill.
- Anyone in Hestia who is good at math is over six feet tall.
- Anyone in Hestia who is good at math works at the mill.

21. Six houses are next to one another on one side of a street. The houses are lettered J, K, L, M, N, and O from left to right.

- House J has a garden.
- House K has a garden.
- House L has a garden.
- House M has a garden.
- House N has a garden.
- House O has a garden.
- House J has both a garden and a porch.
- House K has both a garden and a porch.
- House L has both a garden and a porch.
- House M has both a garden and a porch.
- House N has both a garden and a porch.
- House O has both a garden and a porch.

Based only on the information above, which of the following **must** be true?

- Houses L and N have gardens.
- House N has a porch.
- House P has a porch.
- Houses P and Q have fenced yards.
- Either House M or House N has a fenced yard, but it is not possible to determine which one.

CONTINUE ON TO THE NEXT PAGE ►

My Shadow

by Robert Louis Stevenson

- (1) I have a little shadow that goes in and out with me,
- (2) And what can be the use of him is more than I can see.
- (3) He is very, very like me from the heels up to the head;
- (4) And I see him jump before me, when I jump into my bed.
- (5) The funniest thing about him is the way he likes to grow—
- (6) Not at all like proper children, which is always very slow;
- (7) For he sometimes shoots up taller like an India-rubber ball,
- (8) And he sometimes gets so little that there's none of him at all.
- (9) He hasn't got a notion of how children ought to play,
- (10) And can only make a fool of me in every sort of way.
- (11) He stays so close beside me, he's a coward you can see;
- (12) I'd think shame to stick to nursie as that shadow sticks to me!
- (13) One morning, very early, before the sun was up,
- (14) I rose and found the shining dew on every buttercup;
- (15) But my lazy little shadow, like an arrant sleepy-head,
- (16) Had stayed at home behind me and was fast asleep in bed.

32. The description in the first two lines helps establish a central idea of the poem by

- E. demonstrating the speaker's ignorance because he does not know the use of his shadow.
- F. introducing the use of personification by referring to the shadow as "him."
- G. showing that the shadow follows the speaker wherever he goes.
- H. establishing a consistent rhyme scheme.

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33. Read line 5 from the poem:

The funniest thing about him is the way he likes to grow

The line helps develop the theme of the poem by suggesting that the narrator

- A. does not understand why his shadow changes size.
- B. likes to make fun of other people.
- C. is jealous of the shadow's ability to grow.
- D. is mildly amused by his shadow's behavior.

34. How does the repetition of words in lines 3-4 affect the meaning of the poem?

- E. It reveals the immaturity of the speaker.
- F. It creates a sense of fantasy and irreality.
- G. It shows us that the shadow doesn't have any ideas of his own.
- H. It emphasizes the doubling of the speaker and his shadow.

35. How do lines 11-12 develop the speaker's point of view?

- A. They reveal that the speaker thinks his shadow is unintelligent.
- B. They show that the speaker does not like his caregiver
- C. They suggest that the speaker finds over-dependence embarrassing
- D. They imply that the speaker secretly enjoys having his shadow close to him. .

36. Which line best supports the idea that the speaker of the poem is a child?

- E. "He is very, very like me from the heels up to the head;" (line 3)
- F. "He hasn't got a notion of how children ought to play," (line 9)
- G. "I rose and found the shining dew on every buttercup;" (line 14)
- H. "I'd think shame to stick to nursie as that shadow sticks to me!" (line 12)

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37. Which detail from the poem reflects the speaker's view that there is a correct way to behave:

- A. "Not at all like proper children (6)
- B. "how children ought to play" (9)
- C. "he's a coward you can see" (11)
- D. "But my lazy little shadow" (15)

38. How do the details in line 5-8 most contribute to the development of a theme of the poem?

- E. by demonstrating the narrator's naive understanding of shadows
- F. by introducing toy imagery to emphasize the theme of childhood.
- G. by referencing the other children in the narrator's social circle
- H. by alluding to the narrator's desire to grow up faster than other children.

39. Read lines 13-14 from the poem.

**One morning, very early, before the sun was up,
I rose and found the shining dew on every buttercup;**

What do these lines convey about the speaker's point of view?

- A. They reveal that he likes to wake up before sunrise.
- B. They show that he is trying to escape his shadow.
- C. They suggest that he appreciates natural beauty.
- D. They indicate that he has trouble sleeping.

40. Read lines 15-16 from the poem.

**But my lazy little shadow, like an arrant sleepy-head,
Had stayed at home behind me and was fast asleep in bed.**

The personification in these concluding lines of the poem suggests that the speaker

- E. does not realize how sunlight alters the appearance of shadows.
- F. believes laziness is something to be frowned upon.
- G. thinks of his shadow as a little-brother.
- H. resents his shadow for being able to sleep in.

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The Kiss

by Kate Chopin

It was still quite light out of doors, but inside with the curtains drawn and the smouldering fire sending out a dim, uncertain glow, the room was full of deep shadows. (1)

Brantain sat in one of these shadows; it had overtaken him and he did not mind. The obscurity lent him courage to keep his eyes fastened as ardently as he liked upon the girl who sat in the firelight. (2)

She was very handsome, with a certain fine, rich coloring that belongs to the healthy brune type. She was quite composed, as she idly stroked the satiny coat of the cat that lay curled in her lap, and she occasionally sent a slow glance into the shadow where her companion sat. They were talking low, of indifferent things which plainly were not the things that occupied their thoughts. She knew that he loved her—a frank, blustering fellow without guile enough to conceal his feelings, and no desire to do so. For two weeks past he had sought her society eagerly and persistently. She was confidently waiting for him to declare himself and she meant to accept him. The rather insignificant and unattractive Brantain was enormously rich; and she liked and required the entourage which wealth could give her. (3)

During one of the pauses between their talk of the last tea and the next reception the door opened and a young man entered whom Brantain knew quite well. The girl turned her face toward him. A stride or two brought him to her side, and bending over her chair—before she could suspect his intention, for she did not realize that he had not seen her visitor—he pressed an ardent, lingering kiss upon her lips. (4)

Brantain slowly arose; so did the girl arise, but quickly, and the newcomer stood between them, a little amusement and some defiance struggling with the confusion in his face. (5)

“I believe,” stammered Brantain, “I see that I have stayed too long. I—I had no idea—that is, I must wish you good-by.” He was clutching his hat with both hands, and probably did not perceive that she was extending her hand to him, her presence of mind had not completely deserted her; but she could not have trusted herself to speak. (6)

“Hang me if I saw him sitting there, Nattie! I know it’s deuced awkward for you. But I hope you’ll forgive me this once—this very first break. Why, what’s the matter?” (7)

“Don’t touch me; don’t come near me,” she returned angrily. “What do you mean by entering the house without ringing?” (8)

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"I came in with your brother, as I often do," he answered coldly, in self-justification. "We came in the side way. He went upstairs and I came in here hoping to find you. The explanation is simple enough and ought to satisfy you that the misadventure was unavoidable. But do say that you forgive me, Nathalie," he entreated, softening. (9)

"Forgive you! You don't know what you are talking about. Let me pass. It depends upon—a good deal whether I ever forgive you." (10)

At that next reception which she and Brantain had been talking about she approached the young man with a delicious frankness of manner when she saw him there. (11)

"Will you let me speak to you a moment or two, Mr. Brantain?" she asked with an engaging but perturbed smile. He seemed extremely unhappy; but when she took his arm and walked away with him, seeking a retired corner, a ray of hope mingled with the almost comical misery of his expression. She was apparently very outspoken. (12)

"Perhaps I should not have sought this interview, Mr. Brantain; but—but, oh, I have been very uncomfortable, almost miserable since that little encounter the other afternoon. When I thought how you might have misinterpreted it, and believed things"—hope was plainly gaining the ascendancy over misery in Brantain's round, guileless face—"Of course, I know it is nothing to you, but for my own sake I do want you to understand that Mr. Harvy is an intimate friend of long standing. Why, we have always been like cousins—like brother and sister, I may say. He is my brother's most intimate associate and often fancies that he is entitled to the same privileges as the family. Oh, I know it is absurd, uncalled for, to tell you this; undignified even," she was almost weeping, "but it makes so much difference to me what you think of—of me." Her voice had grown very low and agitated. The misery had all disappeared from Brantain's face.

"Then you do really care what I think, Miss Nathalie? May I call you Miss Nathalie?" They turned into a long, dim corridor that was lined on either side with tall, graceful plants. They walked slowly to the very end of it. When they turned to retrace their steps Brantain's face was radiant and hers was triumphant. (13)

Harvy was among the guests at the wedding; and he sought her out in a rare moment when she stood alone. (14)

"Your husband," he said, smiling, "has sent me over to kiss you." (15)

A quick blush suffused her face and round polished throat. "I suppose it's natural for a man to feel and act generously on an occasion of this kind. He tells me he doesn't want his marriage to interrupt wholly that pleasant intimacy which has existed between you and me. I don't know what you've been telling him," with an insolent smile, "but he has sent me here to kiss you." 16)

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She felt like a chess player who, by the clever handling of his pieces, sees the game taking the course intended. Her eyes were bright and tender with a smile as they glanced up into his; and her lips looked hungry for the kiss which they invited. (17)

“But, you know,” he went on quietly, “I didn’t tell him so, it would have seemed ungrateful, but I can tell you. I’ve stopped kissing women; it’s dangerous.” (18)

Well, she had Brantain and his million left. A person can’t have everything in this world; and it was a little unreasonable of her to expect it. (19)

41. In paragraph 2, how does the phrase “it had overtaken him and he did not mind” affect our understanding of Brantain’s character?

- A. It shows that he is easygoing and accommodating.
- B. It indicates that he is moody and depressive.
- C. It shows that he has trouble hiding his emotions.
- D. It suggests that he is naive and willing to be deceived.

42. Which sentence from the excerpt best supports the idea that Miss Nathalie is not in love with Brantain?

- E. “She was quite composed, as she idly stroked the satiny coat of the cat that lay curled in her lap, and she occasionally sent a slow glance into the shadow where her companion sat.” (paragraph 1)
- F. “She knew that he loved her—a frank, blustering fellow without guile enough to conceal his feelings, and no desire to do so.” (paragraph 1)
- G. “The rather insignificant and unattractive Brantain was enormously rich; and she liked and required the entourage which wealth could give her.” (paragraph 1)
- H. “At that next reception which she and Brantain had been talking about she approached the young man with a delicious frankness of manner when she saw him there.” (paragraph 11)

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21. Which of the following best tells what this passage is about?

- A. how the sense of smell affects taste
- B. the science of how taste buds work
- C. the analysis and creation of flavors
- D. why some flavors cannot be reproduced
- E. the search for the perfect aroma

22. What is the principal goal of the scientific research described in the third paragraph?

- F. to predict consumer taste preferences
- G. to develop artificial foods with strong flavors
- H. to monitor the use of artificial food additives
- J. to produce synthetic equivalents to natural food flavors
- K. to invent entirely new flavors

23. What is the author's main point about the new gas chromatograph?

- A. It helps to identify the taste of aromas in foods.
- B. It is more accurate than most other flavors.
- C. The gas chromatograph has not yet been used to analyze strawberries.
- D. Most people prefer artificial strawberry flavor to a natural flavor.
- E. Fruit flavors cannot be duplicated successfully.

24. Which of the following can be concluded about collecting aromas during food preparation?

- F. The flavors of delicious foods can now be duplicated.
- G. Artificial flavors do not make food taste better.
- H. Certain chemical components of a food's flavor are present in its odor.
- J. Uncooked food is more flavorful than cooked food.
- K. The flavor of a food is always improved by cooking it.

25. What is the most likely reason that the author mentioned orange soda in the fourth paragraph?

- A. to give an example of a well-liked flavor that has no natural counterpart
- B. to explain why artificial orange flavor has not yet been produced
- C. to describe how the aroma of oranges can be used to help reproduce its flavor
- D. to demonstrate that consumers sometimes prefer flavor substitutes to the natural flavors they mimic
- E. to give an example of a flavor you cannot taste without the sense of smell

26. According to the passage, some flavorists are concerned by the fact that

- F. artificial flavors are more expensive to produce than natural flavors.
- G. natural flavors are more difficult to collect than artificial flavors.
- H. consumers are more likely to choose artificial flavors over natural flavors.
- J. artificial flavors are more difficult to create than natural flavors.
- K. natural flavors are more difficult to reproduce than artificial flavors.

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TAP TO GET FULL SHSAT MATERIALS & PREP

45. Read paragraph 6 from the excerpt.

“I believe,” stammered Brantain, “I see that I have stayed too long. I—I had no idea—that is, I must wish you good-by.” He was clutching his hat with both hands, and probably did not perceive that she was extending her hand to him, her presence of mind had not completely deserted her; but she could not have trusted herself to speak.

The description of Miss Nathalie’s reaction in this paragraph conveys

- A. her ability to stay calm in any situation she finds herself in.
- B. her utter disappointment that Brantain is leaving her.
- C. the fact that she is furious with Harvy for ruining her chances of marrying Brantain.
- D. Her uncertainty about how to handle the present predicament.

46. How do the descriptions of Brantain’s expression in paragraph 13 emphasize a theme of the story?

- E. It demonstrates Miss Nathalie’s ability to easily deceive and manipulate Brantain
- F. It illustrates the effect Miss Nathalie’s beauty has on the men in her surroundings.
- G. It shows that Brantain is an optimistic person, and cannot stay upset for long.
- H. It suggests that hope will always triumph over misery and despair.

47. Read paragraph 17 from the excerpt:

She felt like a chess player who, by the clever handling of his pieces, sees the game taking the course intended. Her eyes were bright and tender with a smile as they glanced up into his; and her lips looked hungry for the kiss which they invited.

The simile used in this sentence affects the tone of the paragraph by conveying

- A. a sense of playfulness, since Miss Nathalie enjoys her flirtation with Harvy.
- B. a feeling of passion, because Miss Nathalie is excited for Harvy to kiss her.
- C. a sense of longing, because Miss Nathalie has missed Harvy’s affection for her.
- D. a feeling of victory, because Miss Nathalie believes she has mastered the situation.

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If you have ever watched someone fall on the ice, you've seen slipperiness at work. But have you wondered what makes ice slippery, or why skates or skis glide across ice so easily? The answer might seem obvious: ice is smooth. Yet smoothness in itself does not explain slipperiness. Imagine, for example, skating on a smooth surface of glass or sheet metal.

- Surprisingly, scientists do not fully understand why ice is slippery. Past explanations of slipperiness have focused on friction and pressure. According to the friction theory, a skate blade rubs across the ice, causing friction. The friction produces heat, melting the ice and creating a slippery, microscopic layer of water for the skate to glide across (this theory, however, cannot explain why ice is slippery even when the ice is perfectly motionless).

The pressure theory claims that pressure from a skate blade melts the ice surface, creating a slippery layer of water. The

- water refreezes when the pressure is lifted. Science textbooks typically cite this explanation, but many scientists disagree, claiming that the pressure effect is not great enough to melt the ice. Nor can the pressure theory explain why someone wearing flat-bottomed shoes—which have a greater surface area than skate blades and thus exert less pressure per square inch—can glide across the ice or even go sprawling.

During the 1990s, another theory found acceptance: the thin top layer of ice is liquid, or “liquid-like,” regardless of friction or pressure. This notion was first proposed more than 150 years ago by physicist Michael Faraday. Faraday’s simple experiment illustrates this property: two ice cubes held against each other will fuse together. This happens, Faraday explained, because liquid on the cubes’ surfaces froze solid when the surfaces made contact.

Faraday’s hypothesis was overlooked, in part because scientists did not have the means to detect molecular structures.

- However, technological advances during recent decades allow scientists to measure the thin layer on the surface of the ice. For example, in 1996, a chemist at Lawrence Berkeley Laboratory shot electrons at an ice surface and recorded how they rebounded. The data suggested that the ice surface remained “liquid-like,” even at temperatures far below freezing. Scientists speculate that water molecules on the ice surface are always in motion because there is nothing above them to hold them in place. The vibration creates a slippery layer of molecules. According to this interpretation, the water molecules are not moving up and down; if they also moved side to side, they would constitute a true liquid. The liquid-like nature of ice that people skating on wildly vibrating molecules.

- The phenomenon of a slippery liquid-like surface is not limited to ice, although ice is the most common example. Fused crystals and even diamond crystals, made of carbon, also show this property under certain temperature and pressure conditions.

45. Which of the following best tells what this passage is about?

- A. why ice surfaces are liquid-like
- B. how ice changes from a solid to a liquid
- C. answers to the question of what makes ice slippery
- D. the discoveries of Michael Faraday
- E. the processes of freezing and melting

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13. Which sentence could best follow sentence 18 and support the main point of the fourth paragraph (sentences 17–18)?
- A. Bike share programs are developed in cities mainly to improve air quality.
 - B. Participating in a bike share program is the main way travelers can improve air quality in cities.
 - C. Cities may begin to experience improved air quality as more travelers use bike share programs.
 - D. Bike share programs may be more effective at improving air quality in some cities than they are in other cities.
14. Which sentence is irrelevant to the idea in the third paragraph (sentences 11–14) and should be deleted?
- A. sentence 11
 - B. sentence 12
 - C. sentence 13
 - D. sentence 14
15. Which concluding sentence should replace sentence 20 to best support the information presented in the passage?
- A. One day, bike sharing may become a routine part of modern urban life.
 - B. If small or medium-sized cities can benefit from implementing a bike share program.
 - C. Compared with other solutions, bike sharing seems to have the most potential.
 - D. Ultimately, bike sharing is an interesting and unique way for tourists to explore a city.

**TAP TO GET FULL SHSAT
MATERIALS & PREP**

Research Culture: Highlighting the positive aspects of being a PhD student

by Camille Bernery et al, excerpt

(1) Doing a PhD* (*PhD = a doctoral degree) can be both demanding and rewarding. In addition to overcoming the scientific and intellectual challenges involved in doing original research, a PhD student may also have to deal with financial difficulties, an unhealthy work-life balance, or resulting concerns about their mental health. Despite all this, most PhD students seem satisfied with their decision to do a PhD, mostly because they work in stimulating environments with a high degree of independence and good supervision.

(2) Paradoxically, however, the fact that most PhD students are positive about doing a PhD is not always apparent to the outside world. For example, the present authors recently analyzed more than 90,000 tweets about the PhD experience: almost half of the tweets were positive, and less than a sixth were negative, yet the negative tweets received more likes and retweets. What can be done to counter such misleading and negative impressions? In this article we—a group of PhD students, postdocs and permanent academics—highlight the positive elements of doing a PhD in order to present a more balanced view of the whole PhD experience. We also make recommendations to maintain a positive momentum throughout the PhD. Although these ideas and recommendations are based on our experiences as researchers in ecology working in Europe, we feel that most of the points we make also apply in other disciplines and places.



#phdlife #phdspeaks #phdvoice
#phdchat #phdtips #phdstudent



12 weeks (Sept. – Dec. 2021)

Sentiment analysis of collected tweets

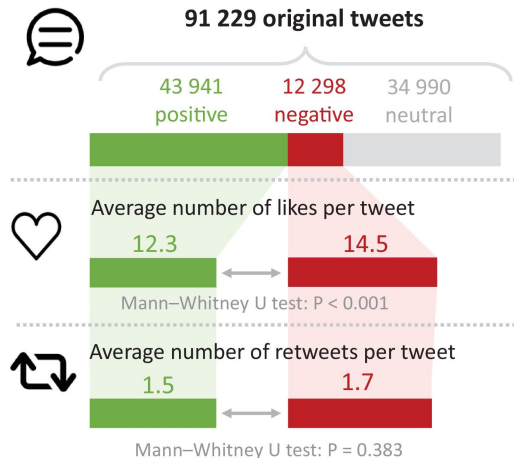


Figure 1

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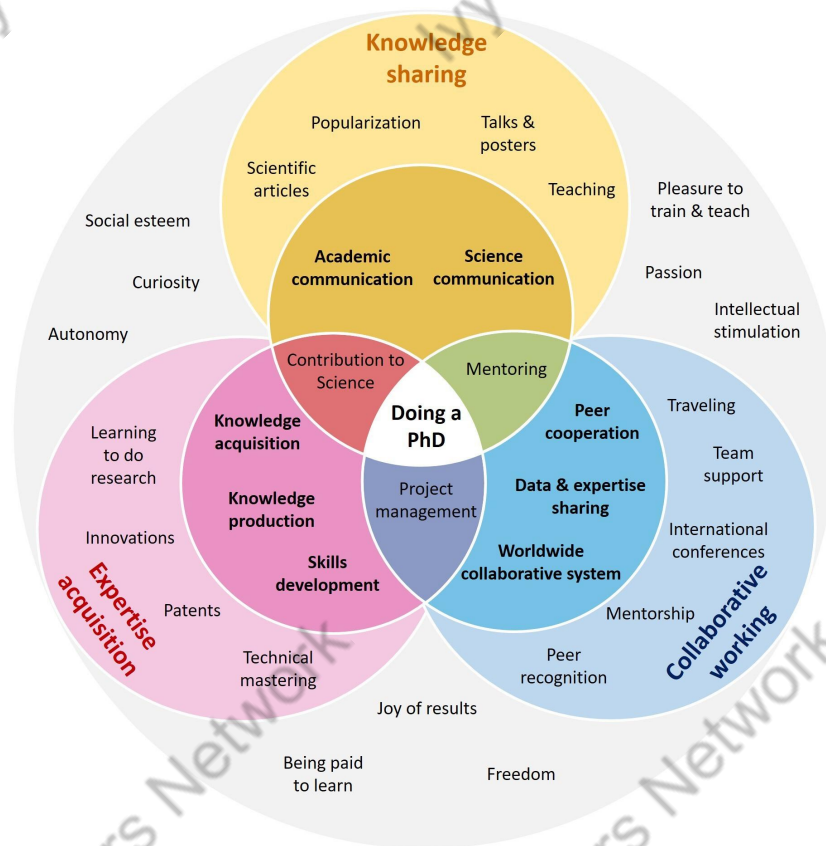


Figure 2

Becoming an expert

(3) Throughout a doctoral project, a PhD student will develop many of the skills needed to grow into an independent researcher, while also developing expertise in a given field. In addition to learning a great deal about their own field – and adding knowledge to it – a PhD student will learn how to perform a variety of tasks, and thus acquire new transferable skills. These will include autonomy, critical thinking, organization and planning, resilience, and the ability to design, lead and carry out projects. Furthermore, unlike postdocs and principal investigators, who have to carry out various management and administrative tasks, PhD students are usually free to dedicate their working hours almost exclusively to academic pursuits that they are (or can become) passionate about. This freedom is one of the aspects that make the PhD experience unique, and it should not be overlooked or taken for granted. Unfortunately, not all PhD students benefit from or are aware of such autonomy, but this ought to be an objective for all PhDs.

Working in a collaborative environment

(4) Learning how to work with other researchers is an important part of getting a PhD. The PhD student's most important working relationship is with their supervisor, but most PhD students will

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also have the opportunity to collaborate with other members of their research group or lab, or even with researchers from the wider community. Working on other projects from time to time can help the student's own project through increased productivity and creativity; moreover, it can strengthen lab cohesion, and might even lead to the student being a co-author on a paper. Additionally, supervising students is a good way of acquiring management skills.

Developing communication skills

(5) The ability to communicate results is a crucial skill for any researcher. A PhD student will, for example, be required to present their work to other scientists as talks or posters at meetings and conferences. The student will also start learning how to write a scientific article. Moreover, there are many opportunities for PhD students to share their passion and knowledge about their field, such as teaching and mentoring undergraduates and other graduate students. They can also get involved in public outreach, and contribute to awakening new passions or educating citizens on certain topics.

(6) Along the PhD journey, neither the doctoral student nor the supervisor will have full control over what will happen. Some things will go wrong, which is why it is important to remain positive and try to make the most of what is a unique opportunity. Focusing only on research can sometimes be exhausting, so spending time on other activities – such as supervising students, teaching, or working on outreach – can break the monotony and generate a sense of progress.

(7) Doing a PhD is a unique experience that typically occupies three or more years of someone's life. Through this experience the student will be enriched by acquiring a range of professional and personal skills, and by gaining a prestigious qualification. In the end, it is in the interest of everyone – the PhD student, the supervisor, their colleagues, their institutions, and academia in general – to make this experience as positive as possible.

Source: <https://elifesciences.org/articles/81075>, edited for length

49. The authors of the study would most likely support which of the following proposals?

- A. Standardizing PhD admissions processes across universities
- B. Increasing the size of current PhD programs to allow for more enrollment
- C. Mandating that all PhD students teach undergraduate and graduate courses
- D. Requiring schools to inform PhD students about their academic freedom over studies

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50. Why were the authors motivated to write this passage?

- E. They aimed to inspire a new generation of young people to pursue PhDs and become academics.
- F. They wanted to counter negativity about PhD programs and inform the public of their benefits.
- G. They wanted to share how much they had enjoyed their PhD programs with a wider audience.
- H. They hoped to draw attention to the way that Twitter disproportionately promotes negative attitudes.

51. All of the following positive aspects associated with obtaining a PhD are mentioned in the passage except

- A. intellectual independence.
- B. work-life balance.
- C. mastery of subject matter.
- D. academic community.

52. Which of the following possible critiques do the authors fail to address?

- E. PhDs are often extremely expensive.
- F. There are more academic PhD graduates than there are jobs available for them.
- G. Not all PhD students are aware that they can organize their academic programs according to their scholarly interests.
- H. The authors are all European science students, so their perspectives might not be generalizable.

53. The purpose of the second paragraph in the passage's overall structure is to

- A. describe problems associated with social media networks.
- B. introduce the main focus of the authors' research project.
- C. present an anecdote that shows why the authors wanted to write this paper.
- D. illustrate how the topic of the passage can be applied to real life scenarios.

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54. What do the authors assume about PhD students?

- E. They are studying scientific disciplines.
- F. They come from all academic backgrounds.
- G. They hope to work as professors or research scientists.
- H. They feel discouraged by the degree's reputation.

55. Which of the following best describes the relationship between paragraph 3 and paragraph 1?

- A. Paragraph 3 gives a possible hypothesis for the main question of paragraph 1.
- B. Paragraph 1 introduces a question that is further explored in paragraph 3.
- C. Paragraph 1 makes a bold claim that is partially contradicted in paragraph 3.
- D. Paragraph 3 provides an explanation for the main point of paragraph 1.

56. Which of the following is the best single sentence summary of the findings of Figure 1?

- E. Though there were more than three times as many positive tweets as negative ones, the negative tweets were more likely to receive audience engagement.
- F. Despite constituting just 13% of all tweets analyzed, negative tweets were more likely to receive audience engagement than those which were positive or neutral.
- G. Most tweets about PhD programs are neither positive nor negative in tone, but are in fact neutral.
- H. Negative tweets receive far more engagement because the Twitter algorithm promotes such content.

57. Which is the best critique of Figure 2?

- A. By putting "Doing a PhD" in a small spot in the center, the chart suggests that the PhD program doesn't have anything to do with the rest of the words.
- B. By placing words outside the circles, the chart implies that they are not part of the PhD, even though these words are referenced in the passage.
- C. It is not clear why the labels on the circles ("Expertise acquisition", "Collaborative working", and "Knowledge sharing") are relevant to the topic.
- D. The diagram references words that were never mentioned in the article.

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PART 2 — MATHEMATICS

57 QUESTIONS

IMPORTANT NOTES

- (1) Formulas and definitions of mathematical terms and symbols are **not** provided.
 - (2) Diagrams other than graphs are **not** necessarily drawn to scale. Do not assume any relationship in a diagram unless it is specifically stated or can be determined from the information given.
 - (3) Assume that a diagram is in one plane unless the question specifically states that it is not.
 - (4) Graphs are drawn to scale. Unless stated otherwise, you can assume relationships according to appearance. For example, lines on a graph that appear to be parallel can be assumed to be parallel. This is also true for concurrent lines, straight lines, collinear points, right angles, etc.
 - (5) Reduce (simplify) all fractions to lowest terms.
-

CONTINUE TO THE NEXT PAGE —>

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Grid-In Questions:**Questions 58 - 62**

DIRECTIONS: Solve each problem. On the answer sheet, write your answer in the boxes at the top of the grid. Start on the left side of each grid. Print only one number or symbol in each box. Under each box, fill in the circle that matches the number or symbol you wrote above.

- Do not fill in a circle under an unused box.
- Do not leave a box blank in the middle of an answer

58.

Simplify:

$$(-0.8) - 4.4 + 2.3 - (-2.5)$$

59.

Angle A and angle B are supplementary. The measure of angle B is 120 more degrees than the measure of angle A. What is the measure of angle B in degrees?

60.

A juice mixture contains $\frac{5}{14}$ gallon of orange juice and $\frac{1}{7}$ gallon of raspberry juice. How many gallons of orange juice per gallon of raspberry juice does the mixture contain? (Express your answer as a decimal.)

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Multiple Choice Questions

Questions 63 - 114

Directions: Solve each problem. Select the best answer from the choices given. Mark the letter of each answer on the answer sheet. When you are solving problems, you can write in the test booklet or on the scrap paper given to you.

63.

Mr. Brown has 880 acres of land, which is 10% more than Mr. Smith has. How many more acres does Mr. Brown have than Mr. Smith?

- A. 80
- B. 88
- C. 800
- D. 880

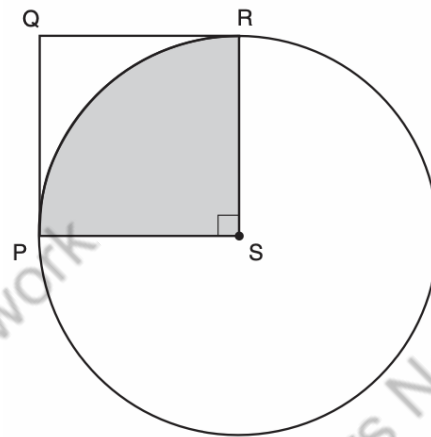
64.

$$\text{If } \frac{4y}{x} - \frac{y}{3x} = \frac{z}{3x}$$

and $x \neq 0$, what is the value of z in terms of y ?

- E. y
- F. $3y$
- G. $11y$
- H. $13y$

65.



In the figure above, PQRS is a square. Point S is the center of the circle, and points P and R are on the circle. If the area of the square is 16 square inches, what is the area, in square inches, of the shaded quarter of the circle?

- A. π
- B. 4π
- C. $16 + 4\pi$
- D. 16π

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66.

A list of consecutive integers begins with x and ends with y . If $y - x = 12$, how many integers are in the list?

- E. 2
- F. 6
- G. 12
- H. 13

67.

Simplify:

$$\frac{\frac{20(x-5)}{5} + 20}{4}$$

- A. x
- B. $4x - 1$
- C. $4x + 5$
- D. $x + \frac{5}{4}$

68.

Bucket A and bucket B both contain $\frac{4}{5}$ cup

of water. If $\frac{1}{2}$ of the water in bucket B is poured into bucket A, how much water is now in bucket A?

- E. $\frac{2}{5}$ cup
- F. $\frac{4}{5}$ cup
- G. $1\frac{1}{5}$ cup
- H. $1\frac{3}{5}$ cup

69.

If r is a whole number and 0.1 is between $\frac{1}{r}$ and $\frac{1}{r+2}$, what is the value of r ?

- A. 0
- B. 1
- C. 2
- D. 9

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48. DISTRIBUTION OF EYE AND HAIR COLOR FOR 64 CHILDREN

	Eye Color		
	Brown	Blue	Total
Hair Color			
Brown	15	10	25
Black	15	20	35

The table above shows the distribution of eye color and hair color for 64 children. How many of these children have blond hair or brown eyes, but not both?

- F. 10
- G. 20
- H. 40
- J. 50
- K. 55

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49. TEST SCORES FOR 17 STUDENTS



According to the figure above, what was the median score for the test?

- F. 70
- G. 75
- H. 80
- J. 90
- K. 95

50. What is the value of $\frac{225}{125} - \frac{1}{125}$?

- A. 0.02
- B. 0.07
- C. 0.20
- D. 0.70
- E. 1.00

51. Which of the following shows the fractions $\frac{1}{2}$, $\frac{2}{3}$, and $\frac{3}{4}$ in order from least to greatest?

- F. $\frac{1}{2}, \frac{2}{3}, \frac{3}{4}$

- G. $\frac{2}{3}, \frac{1}{2}, \frac{3}{4}$

- H. $\frac{3}{4}, \frac{1}{2}, \frac{2}{3}$

- J. $\frac{1}{2}, \frac{3}{4}, \frac{2}{3}$

- K. $\frac{2}{3}, \frac{3}{4}, \frac{1}{2}$



Point Q is to be placed on the number line one-third of the way from point P to point R. What number will be at the midpoint of segment PQ?

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

CONTINUE ON TO THE NEXT PAGE ►

74.

The probability of drawing a red marble at random from a bag of 100 marbles is $\frac{3}{5}$.

After 10 red marbles are removed from the bag, what is the probability of randomly drawing a red marble from the bag?

- E. $\frac{1}{10}$
- F. $\frac{2}{5}$
- G. $\frac{3}{5}$
- H. $\frac{5}{9}$

75.

Each number in a sequence is formed by tripling the previous number and then adding 1. If the 4th number in the sequence is 40 what is the 5th number minus the 1st number?

- A. 41
- B. 81
- C. 120
- D. 362

76.

9, 8, 8, 10, 9, 9, 5

At a cooking competition, there are seven judges who each award a score for each chef's meal. The highest and lowest scores given to each chef are discarded, and the mean of the remaining scores is then calculated and reported as the chef's final score. What is the final score for the chef who received the scores shown above from the judges?

- E. 8.3
- F. 8.5
- G. 8.6
- H. 11.6

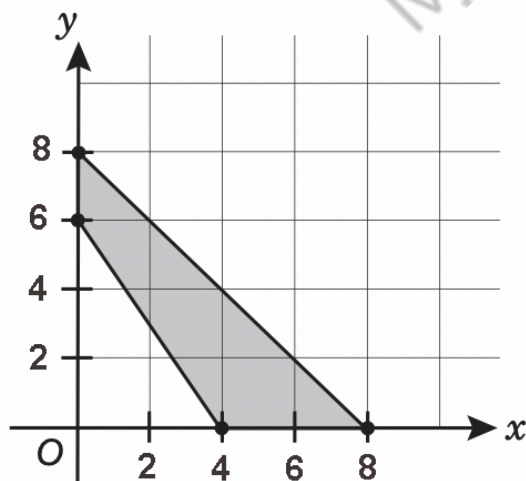
77.

A piece of pipe that is $6\frac{1}{2}$ feet long is cut into 2 pieces of different lengths. The shorter piece has a length of x feet. What is the inequality that expresses all possible values of x ?

- A. $0 < x < 3\frac{1}{4}$
- B. $0 \leq x \leq 6\frac{1}{2}$
- C. $2 < x < 6\frac{1}{2}$
- D. $3\frac{1}{4} < x < 6\frac{1}{2}$

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78.



What is the area, in square units, of the shaded region shown in the figure above?

- E. 12
- F. 20
- G. 24
- H. 32

79.

$$F = \frac{9}{5}C + 32$$

Yesterday in Newtown, the highest temperature was 104 degrees Fahrenheit, F , and the lowest temperature was 68 degrees Fahrenheit. What was the difference between these temperatures, in degrees Celsius, C ?

- A. 20
- B. 36
- C. 52
- D. 64

80.

Let y be an even number. In terms of y , what is the sum of the two odd numbers closest to y ?

- E. y
- F. $2y$
- G. $2y - 2$
- H. $2y + 2$

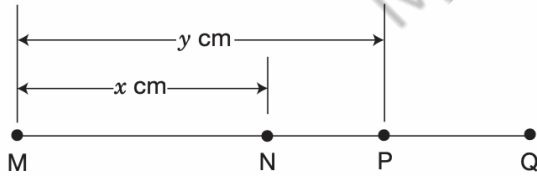
81.

In 1999, the total public debt of the United States was about \$4,900,000,000,000. In that year, there were about 300,000,000 people in the United States. Which amount is the best estimate of the public debt per person for that year?

- A. 1,633
- B. 16,333
- C. 163,333
- D. 1,633,333

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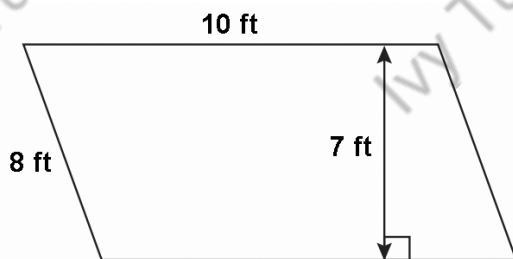
82.



In the figure above, N is the midpoint of MQ.
Which segment has the length of $2x$?

- E. \overline{MQ}
- F. \overline{NP}
- G. \overline{PQ}
- H. \overline{NQ}

83.



What is the area of the parallelogram shown above?

- A. 16
- B. 70
- C. 80
- D. 560

84.

On Friday, a pizzeria makes 50 more pizzas than they make on Thursday. On Wednesday, they made 10 fewer pizzas than were made on Thursday. If they made 280 pizzas in total, how many total pizzas were produced on Friday?

- E. 60
- F. 70
- G. 80
- H. 130

85.

QUIZ SCORES IN MRS. LUCKY'S CLASS

Quiz Score	Number of Students
6	1
7	7
8	4
9	3
10	3

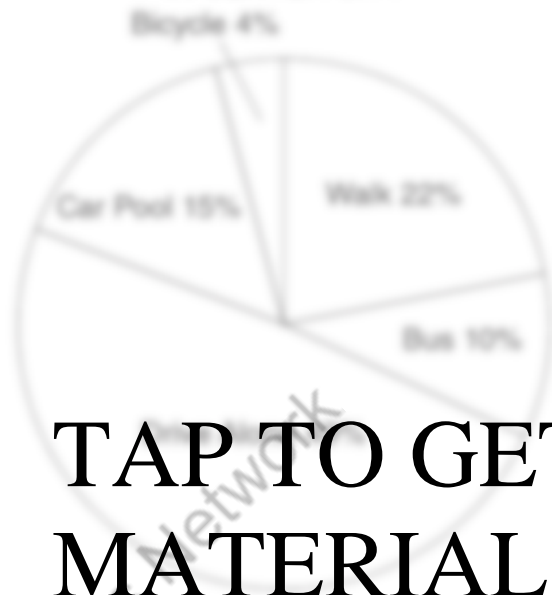
In the table above, what is the mean quiz score?

- A. 7
- B. 7.5
- C. 8
- D. 8.5

START SHSAT PREP

83.

HOW PEOPLE GET TO WORK IN CENTER CITY



Total number of people
working in Center City = 15,000

How many more people in Center City walk to
work than ride their bicycle to work?

- A. 2,500
- B. 2,700
- C. 2,800
- D. 2,900

84.

Which of the following numbers has factors
that include the smallest factor (other than 1)
of 91?

- K. 30
- M. 35
- P. 39
- R. 44

85.

In a scale drawing of a triangular banner, one
side measures 16 centimeters and the other
two sides each measure 12 centimeters. On
the actual banner, these two sides each
measure 36 feet. What is the length of the
remaining side of the actual banner?

- A. 16 ft
- B. 32 ft
- C. 48 ft
- D. 60 ft

86.

The faculty of a certain four-year college
consists of 179 teachers. There are
802 first-year students. The student-to-faculty
ratio for the entire college is 15 to 1. What is
the total number of second-, third-, and
four-year students?

- K. 1,000
- M. 1,100
- P. 1,200
- R. 1,300

87.

$$\left(\frac{1}{2} \right)^2 \cdot \left(\frac{1}{3} \right)^2 \cdot \left(\frac{1}{4} \right)^2$$

What is the value of the expression above?

- A. $14 \frac{7}{20}$
- B. $14 \frac{1}{2}$
- C. $15 \frac{7}{20}$
- D. $15 \frac{1}{2}$

90.

If $\left(\frac{2}{5} - \frac{1}{3}\right)x = \frac{1}{4}$ what is x equal to?

- E. $\frac{5}{4}$
- F. $\frac{6}{5}$
- G. $\frac{7}{4}$
- H. $\frac{15}{4}$

91.

In a certain state, the sales tax rate increased from 8% to 9%. What is the increase in sales tax on a \$300 dollar item?

- A. 3
- B. 18
- C. 24
- D. 27

92.

Evaluate:

$$|-5 + 14 - (-4) - 17| + (-14)$$

- E. -49
- F. -10
- G. -6
- H. -2

93.

SNEAKER SALES BY COLOR

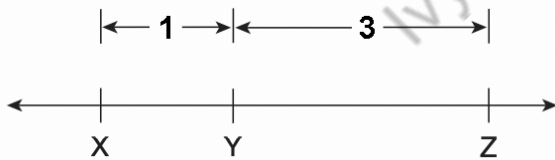
Color	Percent of Sneakers Sold
White	5k
Blue	30
Red	26-2k
Black	k+12
Total	100

The table above shows sneaker sales by color. What percent of the sneakers sold were red?

- A. 8
- B. 10
- C. 22
- D. 26

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94.



On the number line above, the distance between X and Y is 1 unit, and the distance between Y and Z is 3 units. What is the distance between X and the midpoint of Y and Z?

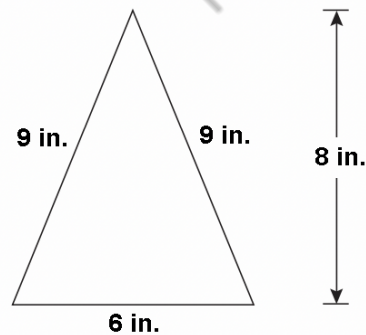
- E. 2
- F. $\frac{5}{2}$
- G. 3
- H. $\frac{7}{2}$

95.

By what percent did the price of a gallon of milk increase if the price was changed from \$3.00 to \$3.15?

- A. 4.8%
- B. 5%
- C. 12.25%
- D. 15%

96.



Mina is cutting out pieces of cardboard to make a pyramid. She will use a square piece for the base and identical triangular pieces for the sides. The figure above shows the dimensions of the triangle for each side. What will be the total surface area, in square inches, of the pyramid, including the square base?

- E. 60
- F. 96
- G. 132
- H. 144

97.

The price of a sandwich was raised from \$8.50 to \$9.35. What was the percent increase in the price?

- A. 8.5%
- B. 10%
- C. 85%
- D. 90%

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98.

Sophie played 5 basketball games and earned a mean score of 9 points per game. If her mean score for the first 4 games was 10 points per game, how many points was her score in the fifth game?

- E. 0
- F. 4
- G. 5
- H. 9.5

99.

Liam bought enough peaches to fill 5 bags. Each bag contains 6 peaches. The total cost was \$12.60. At that rate, how much would Lian pay for 50 peaches?

- A. \$7.56
- B. \$21.00
- C. \$25.20
- D. \$33.60

100.

$$4.2 \div 0.024 =$$

- E. 0.1008
- F. 0.57
- G. 17.5
- H. 175

101.

A tank with a 500-gallon capacity currently contains 100 gallons of water. Additional water is poured into this tank at a rate of 4 gallons per minute. After 50 minutes of adding water, what percentage of the tank's total capacity will be filled? (Assume that there is no loss of water from the tank.)

- A. 20%
- B. 50%
- C. 60%
- D. 67%

102.

Emma is buying yarn to be used to make two pillows. Each pillow requires $2\frac{3}{4}$ feet of yarn. If she buys the yarn for \$6.00 per foot, how much will Emma pay for the yarn?

- E. \$16.50
- F. \$17.50
- G. \$18.00
- H. \$33.00

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107.

A tree grows $2\frac{3}{4}$ inches every four months. What would be its yearly growth in inches per year?

- A. $5\frac{1}{2}$
- B. $6\frac{3}{4}$
- C. $8\frac{1}{4}$
- D. 11

108.

$$4(0.02) - 4(0.2) =$$

- E. -0.88
- F. -0.72
- G. 0
- H. 0.88

109.

What is the value of

$$9\frac{1}{2} + \left(-4\frac{1}{3}\right) - \left(-2\frac{3}{4}\right)?$$

- A. $2\frac{5}{12}$
- B. $7\frac{11}{12}$
- C. 9
- D. $16\frac{7}{12}$

110.

Eduardo has \$300 in a savings account that earns 6% simple interest each year. How much will he have in his account after 1 year, if he doesn't withdraw any money during that time?

- E. \$18
- F. \$306
- G. \$318
- H. \$480

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111.

The probability of an event occurring is 0.06.
What is the chance this event will occur?

- A. Likely
- B. Unlikely
- C. Neither Likely or Unlikely
- D. Impossible

112.

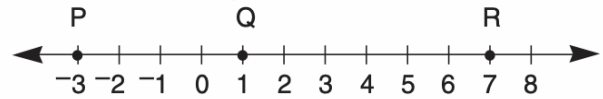
The table below shows the amount of flour and brown sugar needed to make a certain recipe.

Flour	Brown Sugar
1	2.5
6	15
11	x

Based on the relationships above, what is the value of x ?

- E. 5.5
- F. 13.75
- G. 27.5
- H. 33

113.



What is the distance from the midpoint of PQ to R?

- A. 3
- B. 5
- C. 8
- D. 10

114.

A pizza shop sells 4 slices for \$12 and 8 slices for \$24. There is a proportional relationship between the cost and number of slices sold. What is the constant of proportionality for this relationship?

- E. 3 slices per dollar
- F. 3 dollars per slice
- G. 4 slices per dollar
- H. 4 dollars per slice

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125. A garden is made by joining the following ingredients in a ratio: 4 parts parsley, 3 parts onion, 2 parts carrot, and 1 part herb. One herb requires 30 pounds of soil. How many total pounds of soil are required for a herb garden?

A. 40
 B. 45
 C. 50
 D. 55

126. A garden is made by joining the following ingredients in a ratio: 4 parts parsley, 3 parts onion, 2 parts carrot, and 1 part herb. One herb requires 30 pounds of soil. How many total pounds of soil are required for a herb garden?

A. 40
 B. 45
 C. 50
 D. 55

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THIS IS THE END OF THE TEST.
IF TIME REMAINS, YOU MAY CHECK
YOUR ANSWERS. BE SURE THAT THERE
ARE NO STRAY MARKS, PARTIALLY
FILLED ANSWER CIRCLES, OR
INCOMPLETE ERASURES ON YOUR
ANSWER SHEET. ■

ELA: References:

https://www.dietaryguidelines.gov/sites/default/files/2020-12/Dietary_Guidelines_for_Americans_2020-2025.pdf)

<https://etc.usf.edu/lit2go/21/the-adventures-of-huckleberry-finn/99/chapter-1/>)

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<https://publicdomainreview.org/essay/the-dancing-plague-of-1518> (creative commons with credit))

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