GRADE 8

B

NEW YORK CITY PUBLIC SCHOOLS
2018 Specialized High Schools
ADMISSIONS TEST

GENERAL DIRECTIONS

Identifying Information

Turn to Side 1 of the answer sheet. **Line 1** says, "I am well enough to take this test and complete it. I understand that once I break the seal of the test booklet, I may not be eligible for a make-up test. I am a New York City resident and a Grade 8 student taking a Grade 8 test. I understand that a student who is not a New York City resident, who takes the test more than once in a given school year, or who takes the test at the wrong grade level will be disqualified from acceptance to any of the specialized high schools." Sign your name in the space following the word "signature." Do not print your name. **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.**

On **Line 2**, print today's date, using the numbers of the month, the day, and the year. On **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, 2004, would be 3-1-04.

In **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 is for your choice of specialized high schools. 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. Therefore, carefully copy the order in which you ranked the schools on your Test Ticket onto Grid 5.

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 asks for 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.

In **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 is labeled "STUDENT ID NUMBER." All test-takers should print their student ID number in Grid 8. The student ID number is found 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

Identifying Information, continued

Grid 9 is labeled "BOOKLET LETTER AND NUMBER." 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. See the example of correct and incorrect answer marks below.

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SAMPLE ANSWER MARKS

 Ⓐ    Ⓑ    Ⓒ    ●    RIGHT
 Ⓐ    Ⓑ    Ⓒ    Ⓓ    WRONG
 Ⓐ    Ⓑ    Ⓒ    Ⓓ    WRONG
 Ⓐ    Ⓑ    Ⓒ    Ⓓ    WRONG
 Ⓐ    Ⓑ    ●    ●    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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Pearson

B

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SAMPLE TEST, FORM B
PART 1 — ENGLISH LANGUAGE ARTS

57 QUESTIONS

REVISING/EDITING

QUESTIONS 1–9

IMPORTANT NOTE

The Revising/Editing section (Questions 1-9) is in two parts: 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 re-read relevant parts of the sentences or paragraphs before marking the best answer for each question.

1. Read this sentence.

> The Colosseum in Rome, Italy which is considered one of the "new" Seven Wonders of the World, is the largest amphitheater ever built and could hold more than 50,000 spectators.

Which edit should be made to correct the sentence?

A. Delete the comma after *Rome*.
B. Insert a comma after *Italy*.
C. Delete the comma after *World*.
D. Insert a comma after *built*.

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2. Read this paragraph.

> In September 2016 the National Museum of African American History and Culture opened as part of the Smithsonian <u>Institution, the</u> museum is already the Smithsonian's third most popular site. Experts say that they expect this newest Smithsonian facility to welcome nearly 4 million visitors a <u>year. The</u> museum features more than 30,000 <u>objects, including</u> Muhammad Ali's boxing gloves and a dress sewn by Rosa Parks. A commemorative copy of the Emancipation <u>Proclamation, written</u> in 1863 during the presidency of Abraham Lincoln, is also on display at the museum.

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

E. Institution, and the

F. year, and the

G. objects, which include

H. Proclamation, which was written

3. Read this sentence.

> To promote their club, a bake sale will be sponsored by members of the debate team on Wednesday.

How should the sentence be revised?

A. To promote their club, on Wednesday a bake sale will be sponsored by members of the debate team.

B. On Wednesday to promote their club, a bake sale will be sponsored by members of the debate team.

C. To promote their club, members of the debate team will sponsor a bake sale on Wednesday.

D. Members of the debate team, on Wednesday to promote their club, will sponsor a bake sale.

<u>START SHSAT PREP</u>

TAP TO GET FULL SHSAT MATERIALS & PREP

TAP TO GET FULL SHSAT
MATERIALS & PREP

DIRECTIONS: Read the text below and answer the questions following it. You will be asked to improve the writing quality of the text and to correct errors so that the text follows the conventions of standard written English. You should re-read relevant parts of the text before marking the best answer for each question.

The Local Library

(1) According to a 2015 survey, more than two-thirds of Americans own a smartphone, which means that obtaining information or communicating with people is easier than ever before. (2) With the swipe of a finger, the tap of an icon, or a verbal command, people have instant access to articles, blogs, news, and social networking websites. (3) Even with all these immediately available sources of information, one of the best resources for many members of the community also happens to be one of the oldest. (4) The public library is a great place for people to get information.

(5) The public library serves a truly critical role in promoting community. (6) With the explosion of digital media in recent years, people in different locations can now communicate almost instantaneously. (7) And yet many people complain of feeling more isolated and alone than ever before. (8) The library stands in a rare position to help community members meet this universal need for human connection and companionship.

(9) Furthermore, libraries provide certain amenities, such as access to the Internet, for free to all people. (10) A student who does not have a computer at home can research and type a paper for school. (11) Similarly, an unemployed adult without access to the Internet can make use of library resources to find job opportunities. (12) The free items that are found at the library can help people get a lot done.

(13) Public libraries also offer a variety of resources to community members. (14) One important resource is the local librarian, who does far more than check out books and collect fines. (15) Other library resources include free or low-cost tutoring and training programs. (16) Additionally, lectures, book groups, and town meetings promote critical thinking and community engagement. (17) A typical librarian holds a master's degree and can help library patrons navigate through the flood of information available in print and on the Internet.

(18) The hallmark of a public library is that its materials and services are accessible to all. (19) The library connects people to a network of information and resources and is an important part of a community.

START SHSAT PREP

5. Which sentence should replace sentence 4 to best introduce the main claim of the passage?

   A. In this age of smartphones and search engines, the public library is a valuable resource that all members of a community should use.

   B. Finding information is easier than ever, but going to the public library is still a valuable learning experience.

   C. Though today's computers are highly advanced, the resources available at a public library are more useful for students.

   D. Despite the proliferation of social networking sites, a public library is a great place for people who are interested in improving their community.

6. Which sentence would best follow and support sentence 8?

   E. Libraries, which have been around for centuries and are found throughout the world today, help preserve the history of a community.

   F. The public library is often used as a place for community leaders and organizers to host community events, such as hearings or town halls.

   G. Libraries rely on a combination of local, state, and federal dollars to provide the kinds of services and programs that community members have come to expect.

   H. At a public library, people can interact with others through a variety of programs, including teen book clubs, toddler story times, and senior-citizen exercise classes.

7. Which revision of sentence 12 best maintains the formal style established in the passage?

   A. The free resources available at the library can help people accomplish many tasks.
   B. All the free materials you can get at the library can help you do many different tasks.
   C. Everything that is free at the library can help people work on a lot of different things.
   D. The free resources you can find at the library can help you do whatever you need to do.

START SHSAT PREP

8. Where should sentence 17 be moved in order to improve the organization of the fourth paragraph (sentences 13–17)?

    E. to the beginning of the paragraph (before sentence 13)

    F. between sentences 13 and 14

    G. between sentences 14 and 15

    H. between sentences 15 and 16

9. Which concluding sentence should be added after sentence 19 to support the argument presented in the passage?

    A. Therefore, patrons of the public library can grow in both their social life and their level of community engagement.

    B. Clearly, it is in the best interest of community members to maintain, support, and use their public library.

    C. After all, the public library has been a part of American communities since the first library was founded in 1833.

    D. In fact, community leaders must work together to find ways to generate more involvement in events at the public library.

START SHSAT PREP

READING COMPREHENSION

QUESTIONS 10–57

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

CONTINUE ON TO THE NEXT PAGE ▶

START SHSAT PREP

The Tunguska Fireball

1. On June 30, 1908, an enormous fireball shot across the sky and exploded high above the remote Tunguska River Valley in the Siberian region of Russia. Twenty miles away, huts were flattened and people were flung into the air. Villagers 40 miles away felt the heat and heard explosions, and tremors were recorded at a German seismic station more than 3,000 miles away.

2. What caused the intense light and the horrendous destruction of the Tunguska Fireball, as it came to be called? Scientists and laypeople have debated the question for over 100 years. Not until 1927 did a scientific expedition, led by Russian scientist Leonid Kulik, reach the remote site. Kulik discovered a vast region of scorched and downed trees, their trunks pointing away from the center of the blast. Convinced that a meteorite was responsible, Kulik searched for evidence—a crater, a buried meteorite, even fragments of the exploded mass. He never found it.

3. Other scientists, amateur astronomers, and the public suggested alternative theories of what had happened. Some thought it was an earthquake. Perhaps, others said, a black hole—a theoretical object in space where gravity is so strong that even light cannot get out—had collided with Earth or an alien spaceship carrying nuclear material had crashed.

4. For many years Russian scientists believed that the Tunguska Fireball was a comet—a cluster of dust and frozen gases—that had exploded a few hundred feet above the ground. They pointed to the lack of meteoric evidence and the June 30 date, a time of year when Earth was passing through cometary debris. Other scientists disagreed, arguing that a comet would have burned quickly in Earth's atmosphere and could not have created such a blast.

5. Many Western scientists believed that a meteorite was responsible, despite the lack of evidence. The pattern of fallen trees suggested that they were knocked down by a blast about 4 miles above the ground with an energy of 15 megatons of TNT, consistent with a meteoric blast. Yet repeated searches of the surrounding forest and wetlands revealed no evidence of a meteorite.

6. During the 1990s an Italian physicist named Menotti Galli became interested. Galli had previously investigated whether particles from outer space can add carbon atoms to the cellulose in trees. Perhaps the trees at the Tunguska site hid evidence of such extraterrestrial material. Galli and his colleagues traveled to the site by helicopter to gather core samples from spruce trees that had lived through the blast. They analyzed the particles trapped in the trees' resin, and the results were remarkable. Based on studying the trees' rings during the time period when the Tunguska Fireball occurred, the researchers found that the resin contained high levels of high-proton elements, such as copper, gold, and nickel. In fact, it contained ten times more such particles than resin dating from either before or after that time period. Some previously discovered meteorites had also contained elevated levels of these elements, suggesting that the particles had an extra-earthly origin.
But then where is the crater? Is it nearby Lake Cheka, as some claim? Or was the meteorite reduced to dust in the atmosphere? Can scientists rule out a comet carrying those elements? The mystery remains unsolved.

START SHSAT PREP

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14. What is the primary role of paragraph 1 in the structure of the passage?

  E. It explains the scientific importance of the explosion.
  F. It indicates the magnitude of the explosion.
  G. It provides possible causes of the explosion.
  H. It describes the human suffering caused by the explosion.

15. The author includes a series of questions at the end of the last paragraph most likely to

  A. encourage further study of the Tunguska event.
  B. suggest that the Tunguska event had multiple causes.
  C. reflect a personal curiosity about the Tunguska event.
  D. emphasize that the Tunguska event has not yet been fully explained.

START SHSAT PREP

13. A one-room school has three grades—6th, 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.

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

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

 A. Exactly two students are in the 8th grade.
 B. Carla and Doug are in the same grade.
 C. Exactly three students are in the 7th grade.
 D. Heidi and Ann are in the same grade.
 E. Filomena is in the 6th grade.

14. Paul has four bikes...

 1) The blue bike is parked on the extreme left...
 2) ...
 3) Paul's bike is between the yellow bike and the blue bike.
 4) Paul's bike is between the blue bike and the red bike.

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

 F. Paul's bike is green.
 G. The yellow bike is between the red bike and the green bike.
 H. Paul's bike is yellow.
 J. The red bike is next to the green bike.
 K. The color of Paul's bike cannot be determined.

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

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

 A. At least some people in Honie who are over six feet tall are good at math.
 B. At least some people in Honie who are good at math are not millworkers.
 C. Anyone in Honie who is over six feet tall works at the mill.
 D. Anyone in Honie who is good at math is over six feet tall.
 E. Anyone in Honie who is good at math works at the mill.

16. Six houses are next to one another on one side of Pine Street. The houses are lettered ... M, N, P, Q ...
 immediately next to one another...
 ... house has a porch.
 ... house with a porch is next to one another...
 4) No house has both a fenced yard and a porch.

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

 F. Houses L and R have porches.
 G. House N has a porch.
 H. House P has a porch.
 J. Houses P and Q have fenced yards.
 K. Either House M or House N has a fenced yard, but it is not possible to determine which one.

Excerpt from *A Voice in the Wilderness*

by Grace Livingston Hill

1 With a lurch the train came to a dead stop and Margaret Earle, hastily gathering up her belongings, hurried down the aisle and got out into the night.

2 It occurred to her, as she swung her heavy suit-case down the rather long step to the ground, and then carefully swung herself after it, that it was strange that neither conductor, brakeman, nor porter had come to help her off the train, when all three had taken the trouble to tell her that hers was the next station; but she could hear voices up ahead. Perhaps something was the matter with the engine that detained them and they had forgotten her for the moment.

3 The ground was rough where she stood, and there seemed no sign of a platform. Did they not have platforms in this wild Western land, or was the train so long that her car had stopped before reaching it?

4 She strained her eyes into the darkness, and tried to make out things from the two or three specks of light that danced about like fireflies in the distance. She could dimly see moving figures away up near the engine, and each one evidently carried a lantern. The train was tremendously long. A sudden feeling of isolation took possession of her. Perhaps she ought not to have got out until some one came to help her. Perhaps the train had not pulled into the station yet and she ought to get back on it and wait. Yet if the train started before she found the conductor she might be carried on somewhere and he justly blame her for a fool.

5 There did not seem to be any building on that side of the track. It was probably on the other, but she was standing too near the cars to see over. She tried to move back to look, but the ground sloped and she slipped and fell in the cinders,[1] bruising her knee and cutting her wrist.

6 In sudden panic she arose. She would get back into the train, no matter what the consequences. They had no right to put her out here, away off from the station, at night, in a strange country. If the train started before she could find the conductor she would tell him that he must back it up again and let her off. He certainly could not expect her to get out like this.

7 She lifted the heavy suit-case up the high step that was even farther from the ground than it had been when she came down, because her fall had loosened some of the earth and caused it to slide away from the track. Then, reaching to the rail of the step, she tried to pull herself up, but as she did so the engine gave a long snort and the whole train, as if it were in league against her, lurched forward crazily, shaking off her hold. She slipped to her knees again, the suit-case, toppled from the lower step, descending upon her, and together they slid and rolled down the short bank, while the train . . . ran giddily off into the night.

8 The horror of being deserted helped the girl to rise in spite of bruises and shock. She lifted imploring hands to the unresponsive cars as they hurried by her—one, two, three, with bright windows, each showing a passenger, comfortable and safe inside, unconscious of her need.

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[1]**cinders:** track bed made from the residue of burnt coal

START SHSAT PREP

9 A moment of useless screaming, running, trying to attract some one's attention, a sickening sense of terror and failure, and the last car slatted itself past with a mocking clatter, as if it enjoyed her discomfort.

10 Margaret stood dazed, reaching out helpless hands, then dropped them at her sides and gazed after the fast-retreating train, the light on its last car swinging tauntingly, blinking now and then with a leer in its eye, rapidly vanishing from her sight into the depth of the night.

11 She gasped and looked about her for the station that but a short moment before had been so real to her mind; and, lo! on this side and on that there was none!

12 The night was wide like a great floor shut in by a low, vast dome of curving blue set with the largest, most wonderful stars she had ever seen. Heavy shadows of purple-green, smoke-like, hovered over earth darker and more intense than the unfathomable blue of the night sky. It seemed like the secret nesting-place of mysteries wherein no human foot might dare intrude. It was incredible that such could be but common sage-brush, sand, and greasewood wrapped about with the beauty of the lonely night.

13 No building broke the inky outlines of the plain, nor friendly light streamed out to cheer her heart. Not even a tree was in sight, except on the far horizon, where a heavy line of deeper darkness might mean a forest. Nothing, absolutely nothing, in the blue, deep, starry dome above and the bluer darkness of the earth below save one sharp shaft ahead like a black mast throwing out a dark arm across the track.

14 As soon as she sighted it she picked up her baggage and made her painful way toward it, for her knees and wrist were bruised and her baggage was heavy.

15 A soft drip, drip greeted her as she drew nearer; something plashing down among the cinders by the track. Then she saw the tall column with its arm outstretched, and looming darker among the sage-brush the outlines of a water-tank. It was so she recognized the engine's drinking-tank, and knew that she had mistaken a pause to water the engine for a regular stop at a station.

From A VOICE IN THE WILDERNESS by Grace Livingston Hill—Public Domain

16. In paragraph 2, how does the phrase "when all three had taken the trouble to tell her" affect the tone in the first part of the excerpt?

   E. It creates an accusatory tone by suggesting that Margaret believes that others are responsible for her problem.

   F. It introduces a defiant tone by suggesting that Margaret left the train early to prove a point.

   G. It suggests a frustrated tone by showing that Margaret feels confused by the inconsistent help offered by the railroad employees.

   H. It establishes an appreciative tone by showing that Margaret feels cared for by the railroad employees.

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17. Which sentence from the excerpt best supports the idea that traveling to new places by train is unfamiliar to Margaret?

    A. "With a lurch the train came to a dead stop and Margaret Earle, hastily gathering up her belongings, hurried down the aisle and got out into the night." (paragraph 1)

    B. "Perhaps something was the matter with the engine that detained them and they had forgotten her for the moment." (paragraph 2)

    C. "Did they not have platforms in this wild Western land, or was the train so long that her car had stopped before reaching it?" (paragraph 3)

    D. "She could dimly see moving figures away up near the engine, and each one evidently carried a lantern." (paragraph 4)

18. Read this sentence from paragraph 4.

> **Yet if the train started before she found the conductor she might be carried on somewhere and he justly blame her for a fool.**

How does the sentence contribute to the development of the plot?

    E. It shows how Margaret's reliance on the guidance of others leads to the external conflict she faces.

    F. It reveals how Margaret's concern about the opinions of others causes the external conflict she faces.

    G. It highlights how Margaret's indecision results in the external conflict being prolonged.

    H. It illustrates how Margaret's confusion makes it difficult for her to fully understand the external conflict.

19. Read this sentence from paragraph 4.

> **She strained her eyes into the darkness, and tried to make out things from the two or three specks of light that danced about like fireflies in the distance.**

The simile used in the sentence affects the tone of the paragraph by emphasizing a

    A. feeling of comfort as Margaret connects her unfamiliar surroundings with familiar images.

    B. sense of lonesomeness as Margaret realizes that she is on her own in the wilderness.

    C. sense of tranquility as Margaret is distracted from the urgency of her situation by the beauty of the night.

    D. feeling of dread as Margaret regards the desolation of the land that surrounds her.

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20. Read paragraph 9 from the excerpt.

> **A moment of useless screaming, running, trying to attract some one's attention, a sickening sense of terror and failure, and the last car slatted itself past with a mocking clatter, as if it enjoyed her discomfort.**

The imagery in this sentence conveys the

- **E.** growing irritation Margaret feels as she is ignored by people on the train.
- **F.** effort Margaret is making despite being physically unable to keep up with the train.
- **G.** anger that Margaret is experiencing as she watches the train leave without her.
- **H.** vulnerability Margaret feels as the train leaves her behind.

21. How does Margaret's experience in paragraph 9 emphasize a theme of the excerpt?

- **A.** It confirms Margaret's understanding that she cannot rely on help from anyone else.
- **B.** It leads Margaret to realize that her efforts to change her situation are ineffective.
- **C.** It causes Margaret to believe that her own actions led to an unfavorable outcome.
- **D.** It reinforces Margaret's frustration about her lack of control over her surroundings.

22. Read paragraph 10 from the excerpt.

> **Margaret stood dazed, reaching out helpless hands, then dropped them at her sides and gazed after the fast-retreating train, the light on its last car swinging tauntingly, blinking now and then with a leer in its eye, rapidly vanishing from her sight into the depth of the night.**

What does the figurative language in this sentence emphasize?

- **E.** the sense of doubt that Margaret experiences when she is deciding what to do next
- **F.** the anger that Margaret feels toward the people on the train who she expected to help her
- **G.** the embarrassment that Margaret feels when she imagines what others will think of her
- **H.** the hopelessness that Margaret feels when she accepts that the train is continuing on

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TAP TO GET FULL SHSAT MATERIALS & PREP

Excerpt from "Niagara Falls"

by Rupert Brooke

1 The real secret of the beauty and terror of the Falls is not their height or width, but the feeling of colossal power and of unintelligible disaster caused by the plunge of that vast body of water. If that were taken away, there would be little visible change, but the heart would be gone.

2 The American Falls do not inspire this feeling in the same way as the Canadian. It is because they are less in volume, and because the water does not fall so much into one place. By comparison their beauty is almost delicate and fragile. They are extraordinarily level, one long curtain of lacework and woven foam. Seen from opposite, when the sun is on them, they are blindingly white, and the clouds of spray show dark against them. With both Falls the colour of the water is the ever-altering wonder. Greens and blues, purples and whites, melt into one another, fade, and come again, and change with the changing sun. Sometimes they are as richly diaphanous[1] as a precious stone, and glow from within with a deep, inexplicable light. Sometimes the white intricacies of dropping foam become opaque and creamy. And always there are the rainbows. If you come suddenly upon the Falls from above, a great double rainbow, very vivid, spanning the extent of spray from top to bottom, is the first thing you see. If you wander along the cliff opposite, a bow springs into being in the American Falls, accompanies you courteously on your walk, dwindles and dies as the mist ends, and awakens again as you reach the Canadian tumult. And the bold traveller who attempts the trip under the American Falls sees, when he dare open his eyes to anything, tiny baby rainbows, some four or five yards in span, leaping from rock to rock among the foam, and gambolling beside him, barely out of hand's reach, as he goes. One I saw in that place was a complete circle, such as I have never seen before, and so near that I could put my foot on it. It is a terrifying journey, beneath and behind the Falls. The senses are battered and bewildered by the thunder of the water and the assault of wind and spray; or rather, the sound is not of falling water, but merely of falling; a noise of unspecified ruin. So, if you are close behind the endless clamour, the sight cannot recognise liquid in the masses that hurl past. You are dimly and pitifully aware that sheets of light and darkness are falling in great curves in front of you. Dull omnipresent foam washes the face. Farther away, in the roar and hissing, clouds of spray seem literally to slide down some invisible plane of air.

3 Beyond the foot of the Falls the river is like a slipping floor of marble, green with veins of dirty white, made by the scum that was foam. It slides very quietly and slowly down for a mile or two, sullenly exhausted. Then it turns to a dull sage green, and hurries more swiftly, smooth and ominous. As the walls of the ravine close in, trouble stirs, and the waters boil and eddy. These are the lower rapids, a sight more terrifying than the Falls, because less intelligible. Close in its bands of rock the river surges tumultuously forward, writhing and leaping as if inspired by a demon. It is pressed by the straits into a visibly convex form. Great planes of water slide past. Sometimes it is thrown up into a pinnacle of foam higher than a house, or leaps with incredible speed from the crest of one vast wave to another, along the shining curve between, like the spring of a wild beast. Its motion continually suggests muscular action. The power manifest in these rapids moves one with a different sense of awe and terror from that of the Falls. Here the inhuman life and strength are spontaneous, active, almost resolute. . . . A place of fear.

―――――――――――――――――

[1]**diaphanous:** sheer, translucent

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4   One is drawn back, strangely, to a contemplation of the Falls, at every hour, and especially by night, when the cloud of spray becomes an immense visible ghost, straining and wavering high above the river, white and pathetic and translucent. The Victorian lies very close below the surface in every man. There one can sit and let great cloudy thoughts of destiny and the passage of empires drift through the mind; for such dreams are at home by Niagara. I could not get out of my mind the thought of a friend, who said that the rainbows over the Falls were like the arts and beauty and goodness, with regard to the stream of life—caused by it, thrown upon its spray, but unable to stay or direct or affect it, and ceasing when it ceased. In all comparisons that rise in the heart, the river, with its multitudinous waves and its single current, likens itself to a life, whether of an individual or of a community. A man's life is of many flashing moments, and yet one stream; a nation's flows through all its citizens, and yet is more than they. In such places, one is aware, with an almost insupportable and yet comforting certitude, that both men and nations are hurried onwards to their ruin or ending as inevitably as this dark flood. Some go down to it unreluctant, and meet it, like the river, not without nobility. And as incessant, as inevitable, and as unavailing as the spray that hangs over the Falls, is the white cloud of human crying. . . . With some such thoughts does the platitudinous[2] heart win from the confusion and thunder of a Niagara peace that the quietest plains or most stable hills can never give.

From LETTERS FROM AMERICA by Rupert Brooke—Public Domain

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[2]platitudinous: clichéd, common

25. The central idea that the Falls communicate a feeling of "unintelligible disaster" (paragraph 1) is conveyed in paragraph 2 through a description of

A. the glow of the precious stones visible within the water.
B. the dynamic flow of the colors that are visible in the water.
C. the sudden appearance and disappearance of rainbows.
D. the sounds associated with a sense of falling.

26. Read this sentence from paragraph 2.

> **They are extraordinarily level, one long curtain of lacework and woven foam.**

What is the effect of comparing the American Falls to a "long curtain of lacework and woven foam"?

E. It demonstrates the timelessness of the American Falls.
F. It conveys the secretive nature of the American Falls.
G. It illustrates the elegant uniformity of the American Falls.
H. It communicates the intense strength of the American Falls.

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27. Read this sentence from paragraph 3.

> **These are the lower rapids, a sight more terrifying than the Falls, because less intelligible.**

Which statement best describes how the sentence fits into the overall structure of the excerpt?

A. It signals a change from the positive aspects of the Falls to the negative aspects.

B. It indicates a progression from the literal description of the water to a discussion of timeless truths.

C. It highlights a shift from the qualities of the Falls to the qualities of the river.

D. It introduces a contrast between the obvious and the hidden features of the rapids.

28. Which sentence from the excerpt best supports the idea that the essence of the Falls lies in their emotional impact?

E. "If that were taken away, there would be little visible change, but the heart would be gone." (paragraph 1)

F. "By comparison their beauty is almost delicate and fragile." (paragraph 2)

G. "One is drawn back, strangely, to a contemplation of the Falls, at every hour, and especially by night, when the cloud of spray becomes an immense visible ghost, straining and wavering high above the river, white and pathetic and translucent." (paragraph 4)

H. "A man's life is of many flashing moments, and yet one stream; a nation's flows through all its citizens, and yet is more than they." (paragraph 4)

29. Read this sentence from paragraph 4.

> **There one can sit and let great cloudy thoughts of destiny and the passage of empires drift through the mind; for such dreams are at home by Niagara.**

The sentence most contributes to the development of ideas in the excerpt by

A. suggesting that viewing the Falls can be a life-changing experience.

B. showing that the cliffs of the Falls are a good place for self-examination.

C. emphasizing that the grandeur of the Falls seems impossible to grasp.

D. highlighting the type of reflection that is inspired by a visit to the Falls.

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Uncovering the Past

1   Archaeology as a distinct branch of science is only about two centuries old. The first archaeological activities focused largely on the search for clues about earlier human societies. In the nineteenth century, most archaeologists were amateurs trained in ancient languages and history. Many were art historians whose interest lay in the artwork and monuments of ancient civilizations. For the most part, their excavations were aimed at uncovering and removing priceless artwork and other valuable artifacts for museum display. Collectively, these early archaeologists are now considered traditional archaeologists.

2   Today, however, there is a different approach to archaeology, one that tries to reconstruct the everyday life of people in ancient times by applying the scientific methods of a range of specialized fields. Modern archaeologists take full advantage of available technology. Laptop computers enable digging teams to record their finds at each level of an excavation. With sketchpad computer software, archaeologists can draw their finds in the field. Three-dimensional computer modeling enables researchers to create floor plans and elevations for the structures they uncover. Archaeologists can also use remote sensing technologies such as radar and lidar, which is similar to radar but it uses laser light instead of radio waves. These technologies enable scientists to detect traces of early settlements that are not visible to the human eye.

3   The excavations at Kourion, a Roman port city on the island of Cyprus in the Mediterranean Sea, serve as an example of the modern approach. Portions of Kourion had been unexpectedly buried by a massive earthquake in the fourth century A.D. Traditional archaeologists were interested primarily in the remains of Kourion's theater, temple, and classical monuments. They also collected precious objects, such as jewelry, found in nearby tombs. Modern archaeologists, however, have focused their studies and excavations on the settlement itself. This preserved seaport has proved to be a gold mine of important information about everyday life sixteen centuries ago.

4   During one excavation of a house at Kourion, for example, forensic anthropologists were able to reconstruct the skeleton of a young girl, whom they called Camelia. On the basis of her teeth, they determined her age to be about thirteen, although measurement of her skeleton showed that she was only the size of a modern eleven-year-old. The study of the teeth also confirmed her sex and pointed to her excellent health; Camelia had no cavities. Even after centuries, the forensic scientists could study the physical evidence in ways similar to those used in criminal investigations to determine the circumstances of Camelia's death.

5   Other specialists on this excavation included a zooarchaeologist, who identified animal remains, including the skeleton of a mule found near Camelia. Another specialist, a paleobotanist, studied the contents of a bake oven at the site and identified four domesticated grains among the charred crumbs—evidence of a kind of ancient multigrain bread.

6   Although the archaeologists at this site unearthed a few beautiful items, the excavation did not uncover any priceless artwork for museums. Nonetheless, the archaeological processes used in Kourion have given us a valuable insight into everyday life in a Roman city.

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32. Which of the following best describes the goal of modern archaeology?

    E. to use science to learn how people lived in the past

    F. to find artwork from ancient civilizations

    G. to search for evidence of ancient settlements

    H. to uncover precious objects for display in museums

33. What would a traditional archaeologist be most interested in finding at a site like Kourion?

    A. a human skeleton

    B. beautiful jewelry or ceramics

    C. evidence of foods eaten

    D. the remains of animals

34. What role does paragraph 2 play in the structure of the passage?

    E. It provides a contrast to the topic discussed in the first paragraph.

    F. It details examples that support the central idea of the first paragraph.

    G. It states a theory that will be explained further in the third paragraph.

    H. It summarizes the information found in the rest of the passage.

35. Which conclusion is best supported by the information in paragraph 4?

    A. Forensic anthropologists specialize in the excavation of ancient theaters and temples.

    B. Forensic anthropologists can obtain a variety of information by examining teeth.

    C. Forensic anthropologists believe that people in the past were smaller than people are today.

    D. Forensic anthropologists primarily investigate ancient crimes.

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36. As described in paragraphs 4–5, what did the archaeological team learn about life in Kourion?

    E. People in Kourion had a better diet than people have today.

    F. People in Kourion kept a wide variety of domesticated animals.

    G. People in Kourion had a shorter life expectancy than people have today.

    H. People in Kourion made bread from various domesticated grains.

37. What is the most likely reason the author mentions the zooarchaeologist (paragraph 5)?

    A. to introduce the topic of other artifacts discovered near Camelia

    B. to contrast this position with that of the paleobotanist

    C. to complete the list of archaeological specialists

    D. to provide an example of a particular field in modern archaeology

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13. A one-room school has three grades: 6th, 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.

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

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

   A. Exactly two students are in the 8th grade.
   B. Carla and Doug are in the same grade.
   C. Exactly three students are in the 8th grade.
   D. Heidi and Ann are in the same grade.
   E. Filomena is in the 8th grade.

14. Four bikes are parked in a row, etc.

   1) The blue bike is parked on the extreme left.
   2) The yellow bike is next to the red bike.
   3) The green bike is between the yellow bike and the blue bike.
   4) Paul's bike is between the blue bike and the red bike.

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

   F. Paul's bike is green.
   G. The yellow bike is between the red bike and the green bike.
   H. Paul's bike is yellow.
   J. The red bike is next to the green bike.
   K. The color of Paul's bike cannot be determined.

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

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

   A. At least some people in Honie who are over six feet tall are good at math.
   B. At least some people in Honie who are good at math are not millworkers.
   C. Anyone in Honie who is over six feet tall works at the mill.
   D. Anyone in Honie who is good at math is over six feet tall.
   E. Anyone in Honie who is good at math works at the mill.

16. Six houses are next to one another on one side of Park Street. The houses are lettered consecutively.

   1) The two houses that have fenced yards are immediately next to one another.
   2) Three houses have porches.
   3) None of the houses with a porch is next to one another.
   4) No house has both a fenced yard and a porch.

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

   F. Houses L and R have porches.
   G. House N has a porch.
   H. House P has a porch.
   J. Houses P and Q have fenced yards.
   K. Either House M or House N has a fenced yard, but it is not possible to determine which one.

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Snowy Mountains

by John Gould Fletcher

Higher and still more high,
Palaces made for cloud,
Above the dingy city-roofs
Blue-white like angels with broad wings,
5 Pillars of the sky at rest
The mountains from the great plateau
Uprise.

But the world heeds them not;
They have been here now for too long a time.
10 The world makes war on them,
Tunnels their granite cliffs,
Splits down their shining sides,
Plasters their cliffs with soap-advertisements,
Destroys the lonely fragments of their peace.

15 Vaster and still more vast,
Peak after peak, pile after pile,
Wilderness still untamed,
To which the future is as was the past,
Barrier spread by Gods,
20 Sunning their shining foreheads,
Barrier broken down by those who do not need
The joy of time-resisting storm-worn stone,
The mountains swing along
The south horizon of the sky;
25 Welcoming with wide floors of blue-green ice
The mists that dance and drive before the sun.

"Snowy Mountains" by John Gould Fletcher—Public Domain

38. The description in the first stanza (lines 1–7) helps establish a central idea of the poem by

    E. comparing the length of time the mountains have existed with the length of time the city has existed.

    F. contrasting the grandeur of the mountains with the structures in the city below them.

    G. implying that the mountains are a source of inspiration to the people in the city below.

    H. suggesting that the mountains are larger than the people in the city realize.

39. Read line 1 and line 15 from the poem.

> **Higher and still more high,**

> **Vaster and still more vast,**

The parallel structure of the two lines

A. emphasizes how the sense of wonder the speaker has at the beginning of the poem changes to a fear of the mountains.

B. reinforces the sense of awe the speaker experiences when considering the magnificence of the expansive mountains.

C. reveals that the mountains are continually expanding both in height and land mass.

D. stresses a contrast between the height of the mountains and the area of land the mountains cover.

40. Read line 5 from the poem.

> **Pillars of the sky at rest**

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

E. serve a noble and supportive purpose in the world.

F. attract the clouds with their strength and permanence.

G. remain untamed through the ages.

H. provide protection for the people.

41. How does isolating the word "Uprise" in line 7 affect the meaning of the poem?

A. It creates a contrast between the great plateau and the city buildings.

B. It reveals the similarity between the tall buildings in the city and the tall mountains on the horizon.

C. It creates a vision of the region before people developed the land.

D. It emphasizes that the mountains dominate the landscape.

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42. How does the poet develop the speaker's point of view in the second stanza (lines 8–14)?

    E. by describing images of the mountains' awe-inspiring size and strength

    F. by illustrating the differences among the various ways humans can impact the natural environment

    G. by criticizing society for taking careless, destructive courses of action against nature

    H. by demonstrating how the mountains and the people are able to benefit from each other

43. Which line from the poem best supports the idea that people have forfeited priceless natural beauty in order to make a profit?

    A. "Above the dingy city-roofs" (line 3)

    B. "The world makes war on them," (line 10)

    C. "Tunnels their granite cliffs," (line 11)

    D. "Plasters their cliffs with soap-advertisements," (line 13)

44. Which detail from the poem reflects the speaker's view that people often fail to appreciate what is familiar?

    E. "The mountains from the great plateau" (line 6)

    F. "They have been here now for too long a time." (line 9)

    G. "Splits down their shining sides," (line 12)

    H. "To which the future is as was the past," (line 18)

45. How do the details in the third stanza (lines 15–26) contribute to the development of the theme of the poem?

    A. by reflecting nature's capacity to resist change

    B. by showing that nature is capable of influencing human will

    C. by exposing how a lack of awareness leads to nature's ruin

    D. by explaining why people must respect nature

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12. Which sentence could best follow sentence 17 and support the main point of the fourth paragraph (sentences 17–18)?

E. Bike share programs are developed in cities mainly to improve air quality.

F. Participating in a bike share program is the main way travelers can improve air quality in cities.

G. Cities may begin to experience improved air quality as more travelers use bike share programs.

H. Bike share programs may be more effective at improving air quality in some cities than they are in other cities.

13. Which sentence is irrelevant to the ideas in the third paragraph (sentences 11–16) and should be deleted?

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A. sentence 12

B.

C.

D. sentence 16

14. Which concluding sentence should replace sentence 20 to better support the information presented in the passage?

E. Over time, bike sharing may become a routine part of modern urban life.

F. Even small, medium-sized cities can benefit from implementing a bike share program.

G. Compared with other solutions, bike sharing seems to have the most potential.

H. Ultimately, bike sharing is an interesting and unique way for tourists to explore a city.

START SHSAT PREP

Samuel Morse, an American inventor, is credited with creating the electronic telegraph, a communication device that allows users to send messages using a system of short and long pulses that represent letters, numbers, and punctuation. In 1844 the United States Congress passed the Telegraph Bill, which provided Morse with the funds to build an electric telegraph system.

Invention of the Telegraph

Earlier Signal Systems

1   Long before Samuel F. B. Morse electrically transmitted his famous message "What hath God wrought?" from Washington to Baltimore on May 24, 1844, there were signaling systems that enabled people to communicate over distances. Most were visual or "semaphore" systems using flags or lights. In the eighteenth century, such systems used an observer who would decipher a signal from a high tower on a distant hill and then send it on to the next station. The young American republic wanted just such a system along its entire Atlantic coast and offered a prize of $30,000 for a workable proposal. The framers of this legislation[1] had no way of knowing that when they used the word "telegraph" to refer to this visual semaphore system, they would be offered an entirely new and revolutionary means of communication—electricity.

The Growth of an Idea

2   The idea of using electricity to communicate over distance is said to have occurred to Morse during a conversation aboard ship when he was returning from Europe in 1832. Michael Faraday's recently invented electromagnet was much discussed by the ship's passengers, and when Morse came to understand how it worked, he speculated that it might be possible to send a coded message over a wire. While a student at Yale College years before, he had written his parents a letter about how interesting he found the lectures on electricity. Despite what he had learned at Yale, Morse found when he began to develop his idea that he had little real understanding of the nature of electricity, and after sporadic attempts to work with batteries, magnets, and wires, he finally turned for help to a colleague at the University of the City of New York, Leonard D. Gale.

3   Gale was a professor of chemistry and familiar with the electrical work of Princeton's Joseph Henry, a true pioneer in the new field. Well before Morse had his shipboard idea about a telegraph, Henry rang a bell at a distance by opening and closing an electric circuit. In 1831, he had published an article, of which Morse was unaware, that contained details suggesting the idea of an electric telegraph. Gale's help and his knowledge of this article proved crucial to Morse's telegraph system because Gale not only pointed out flaws in the system but showed Morse how he could regularly boost the strength of a signal and overcome the distance problems he had encountered by using a relay system Henry had invented. Henry's experiments, Gale's assistance, and, soon after, hiring the young technician Alfred Vail were keys to Morse's success.

Obstacles and Opportunities

4   By December 1837, Morse had enough confidence in his new system to apply for the federal government's appropriation, and during the next year he conducted demonstrations of his telegraph both in New York and Washington.

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[1]**legislation:** Telegraph Bill

5 However, when the economic disaster known as the Panic of 1837 took hold of the nation and caused a long depression, Morse was forced to wait for better times. It was during this period that Morse visited Europe again and tried not only to secure patent protection overseas but to examine competing telegraph systems in England. . . .

6 By 1843, the country was beginning to recover economically, and Morse again asked Congress for the $30,000 that would allow him to build a telegraph line from Washington to Baltimore, forty miles away. The House of Representatives eventually passed the bill containing the Morse appropriation, and the Senate approved it in the final hours of that Congress's last session. With President Tyler's signature, Morse received the cash he needed and began to carry out plans for an underground telegraph line.

Realizing a Great Invention

7 Morse had hired the ingenious construction engineer Ezra Cornell to lay the pipe carrying the wire, and although Cornell did his job superbly, one of Morse's partners, Congressman F. O. J. Smith, had purchased wire with defective insulation. Too much time had been wasted laying bad wire, and with the project on a rigid deadline, something had to be done quickly. Cornell suggested that the fastest and cheapest way of connecting Washington and Baltimore was to string wires overhead on trees and poles. The desperate Morse gave the go-ahead, and the line was completed in time for the dramatic and spectacularly successful link between the Supreme Court chamber of the Capitol building and the railroad station in Baltimore.

8 Soon, as overhead wires connected cities up and down the Atlantic coast, the dots-and-dashes method[2] that recorded messages on a long moving strip of paper was replaced by the operator's ability to interpret the code in real time. . . . Telegraph lines soon extended westward, and within Morse's own lifetime they connected the continents of Europe and America.
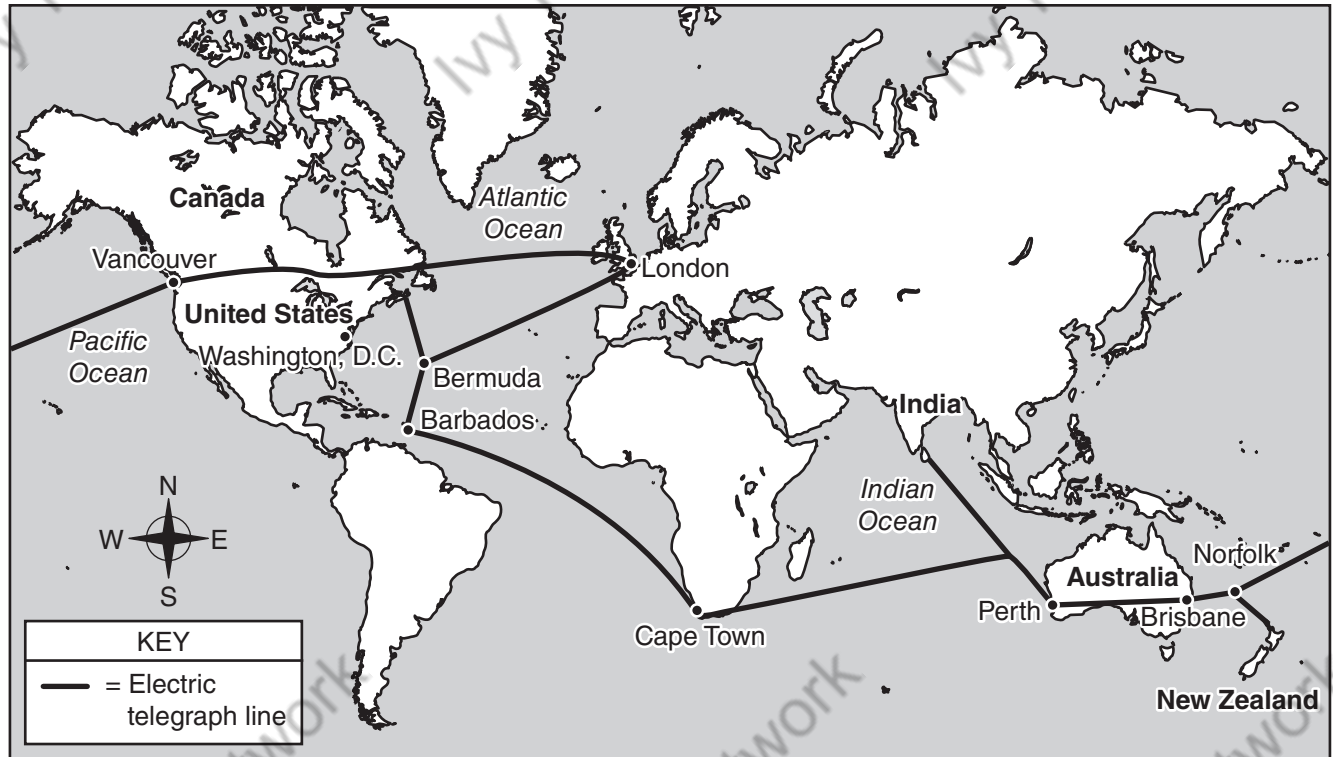
"Invention of the Telegraph"—Public Domain/Library of Congress

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[2]**dots-and-dashes method:** the short and long pulses of Morse code that are sent and received by telegraph operators
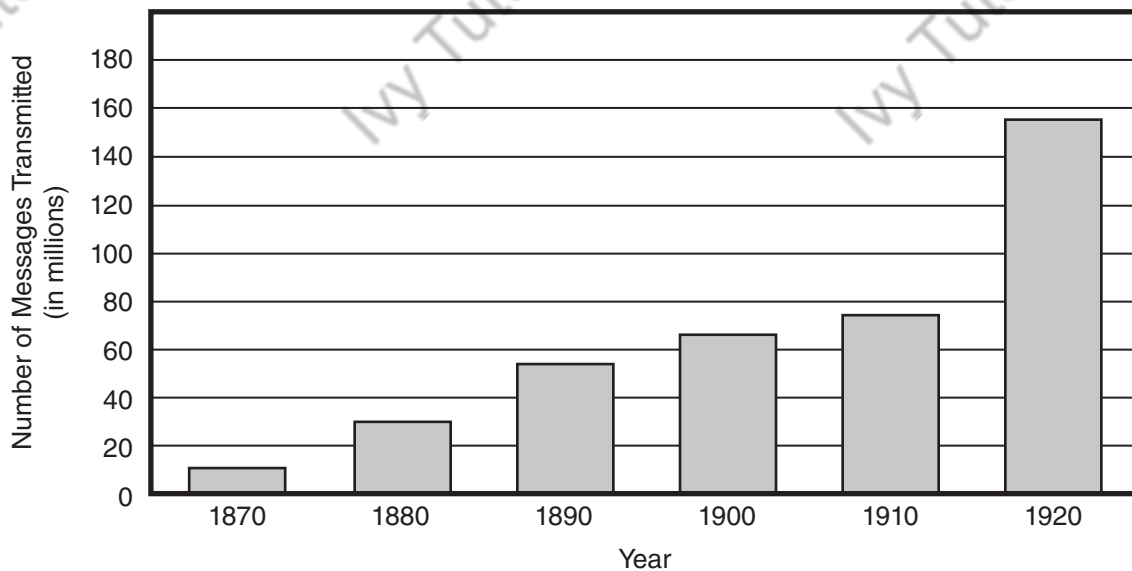
BRITISH ALL-RED TELEGRAPH LINE, 1902

The first transatlantic electric telegraph message was sent in 1858, and by 1902 the British All-Red Line connected most of the world.

TELEGRAPH MESSAGES TRANSMITTED, 1870–1920

Source: U.S. Bureau of the Census. *Historical Statistics of the United States, Colonial Times to 1970, Bicentennial Edition, Part 2. Washington, D.C., 1975*.

48. Which statement describes how the author's use of problem-solution in paragraph 2 contributes to the development of ideas in the passage?

E. Morse's discussion on a ship about Faraday's electromagnet reminded him of the Yale College lectures on electricity, which he had enjoyed but had not fully understood, inspiring him to learn more about electricity from his colleague Gale.

F. Morse's discouragement over his lack of knowledge of electricity prompted him to experiment with batteries, magnets, and wires, which led to the development of a new long-distance communication system.

G. Morse's difficulty in understanding how Faraday's electromagnet worked was frustrating, and it pushed him to create a system for sending signals over wires.

H. Morse's longtime fascination was not enough to make up for his lack of knowledge about electricity, so he eventually sought help from Gale.

49. Which statement describes how the author's use of sequencing in paragraph 3 contributes to the overall structure of the passage?

A. It shows that several people were simultaneously attempting to create an electric telegraph.

B. It shows how the invention of the electric telegraph depended on information and techniques discovered by others.

C. It shows that multiple means of long-distance communication were being used at the same time.

D. It shows how quickly long-distance communication changed from visual signals to electrical signals.

50. Read this sentence from paragraph 7.

The desperate Morse gave the go-ahead, and the line was completed in time for the dramatic and spectacularly successful link between the Supreme Court chamber of the Capitol building and the railroad station in Baltimore.

The words "dramatic" and "spectacularly" in the sentence convey a

E. sense of relief and fulfillment that the line was finished.

F. sense of wonder and of celebration that the telegraph line was completed on time.

G. feeling of excitement about the future possibilities of the telegraph.

H. feeling of confidence about being able to continue the work.

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21. Which of the following best tells what the 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. Which of the following is the most likely reason that the author mentions strawberry flavor?

A. People prefer the taste of oranges to strawberries.
B. Strawberry flavor is harder to reproduce than most other flavors.
C. A 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 odorless 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 mentions 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. artificial flavors are not as healthy as natural flavors.
H. artificial flavor added to otherwise healthy food.
J. artificial flavor added to otherwise healthy food.
K. people feel close to strongly prefer artificial flavors over natural flavors.

54. Which sentence is the best summary of how Morse obtained the funding necessary to build his telegraph system?

    E. Morse applied for a federal grant that was delayed until 1843, so he spent time traveling in Europe, where he concentrated on obtaining a patent for his system.

    F. Morse applied for a government grant that required both houses of Congress and the president to pass a bill awarding him $30,000 for his telegraph project.

    G. Morse applied for a government appropriation and conducted telegraph demonstrations to show that his system could work, and after a delay caused by a financial depression, Congress approved the $30,000 appropriation in 1843.

    H. Working with Gale and Vail allowed Morse to find flaws in Henry's work and to develop his own ideas before applying for the federal government appropriation.

55. How does the map provide additional support for a central idea of the passage?

    A. by demonstrating that Morse's telegraph system greatly exceeded the limitations of previous long-distance communication systems

    B. by indicating that Morse was lacking foresight by seeking a patent only in North America

    C. by proving that Gale's advice helped Morse extend the telegraph's range much farther than first thought possible

    D. by providing a graphic that shows the surprisingly immense influence Morse's telegraph had across the world

56. The idea that, in the mid-nineteenth century, the United States was mostly unaware of the possibilities of electricity is illustrated in the passage mainly through the

    E. description of the government's initial desire to expand a semaphore signaling system that used either flags or lights along the Atlantic Coast.

    F. delay by the House of Representatives to pass the bill funding Morse's telegraph line six years after he first applied for the appropriation.

    G. discussions of the newly invented electromagnet that sparked the idea of sending codes through wires.

    H. description of how an electric circuit could be closed to ring a bell at a distance.

57. With which statement would the author most likely agree?

    A. Morse's telegraph was successful because the wires were strung aboveground rather than underground as originally planned.

    B. Understanding the importance of Morse's telegraph requires detailed knowledge of electrical systems.

    C. The implementation of Morse's telegraph system was overly influenced by economic factors.

    D. Morse's invention of the telegraph made a great stride toward better connecting people across the United States and across the world.

START SHSAT PREP

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 figured out 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, (on a graph) lines that appear to be parallel can be assumed to be parallel; likewise for concurrent lines, straight lines, collinear points, right angles, etc.

(5) Reduce (simplify) all fractions to lowest terms.

CONTINUE ON TO THE NEXT PAGE ▶

START SHSAT PREP

GRID-IN QUESTIONS

QUESTIONS 58–62

DIRECTIONS: Solve each question. 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.**
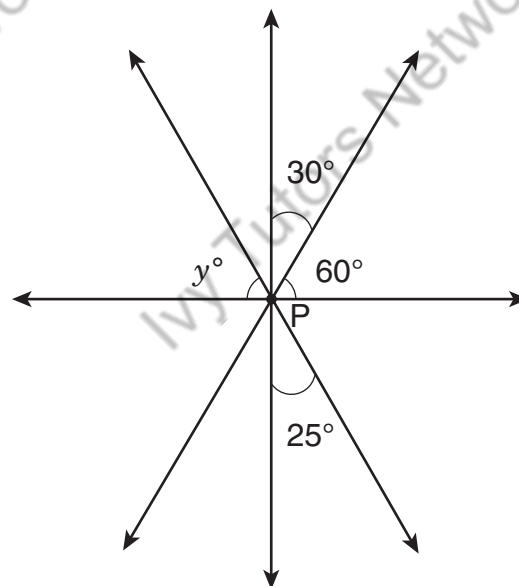
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58. How many 5-digit numbers can be created using the digits 2, 3, 5, 7, and 8 without repeating any digits within that 5-digit number?

59.
$$\frac{147-x}{12} = 12$$

What is the value of x in the equation shown above?

60. $|(-6) - (-5) + 4.2| - |3 - 9.6| =$

61. Tyler has completed 60 pages in his French workbook. This is 20% of the total number of pages in the workbook. How many pages are in the workbook?

62.

Four straight lines intersect at point P as shown above. What is the value of y?

START SHSAT PREP
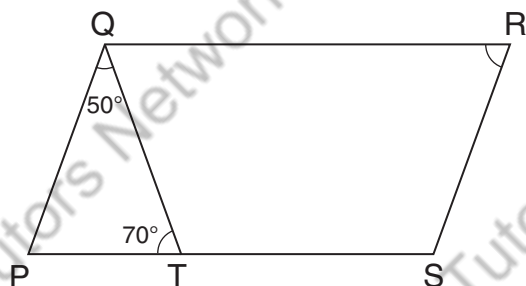
MULTIPLE CHOICE QUESTIONS

QUESTIONS 63–114

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

---

63. If $x = 9$ and $y = -7$, what is the value of $x(x - 2y)$?

    A. 18
    B. 45
    C. 144
    D. 207

64.

In the figure above, PQRS is a parallelogram. The measure of $\angle PQT$ is $50°$, and the measure of $\angle PTQ$ is $70°$. What is the measure of $\angle QRS$?

    E. 60°

    F. 70°

    G. 80°

    H. 120°

65.
$$M = 3N = \frac{P}{4} = Q + 5 = \frac{R}{7} > 0$$

Based on the statement above, which variable has the **greatest** value?

    A. M

    B. N

    C. P

    D. R

66. A roofing contractor uses shingles at a rate of 3 bundles for every 96 square feet of roof covered. At this rate, how many bundles of shingles will he need in order to cover a roof that is 416 square feet?

    E. 5
    F. 12
    G. 13
    H. 14

67. To make party invitations, Macie could buy a package of paper for \$10.50, or she could buy x individual sheets of the same paper for \$0.15 each. What is the largest value of x that would make buying the individual sheets **less** expensive than buying the package?

    A. 60
    B. 65
    C. 69
    D. 70

START SHSAT PREP

DISTRIBUTION OF EYE AND HAIR COLOR FOR 84 CHILDREN

Hair Color	Eye Color		
	Brown	Blue	Total
Blond			25
Black			35

The table above shows the distribution of eye color and hair color for 84 children. How many of these children have blond hair or brown eyes, but **not both**?

F. 22
G. 33
H. 44
J. 52
K. 55

A. 0.07
B. 0.67
C. 6.70
D. 6.70
E. 7.00

Which of the following shows the fractions in order from least to greatest?

TEST SCORES FOR 17 STUDENTS

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

F. 70
G. 75
H. 76
J. 80
K. 90

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

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

73. A cooler contains three types of beverages: 5 bottles of apple juice, 3 bottles of grape juice, and 6 bottles of orange juice. What is the probability that a bottle chosen at random from this cooler is **not** apple juice?

A. $\dfrac{1}{9}$

B. $\dfrac{5}{14}$

C. $\dfrac{9}{14}$

D. $\dfrac{2}{3}$

74. A large circular dinner plate has a radius of 20 centimeters. A smaller circular plate with a circumference of 20π centimeters is placed in the center of the larger dinner plate. What is the area of the part of the larger dinner plate that is not covered by the smaller plate?

E. 20π sq cm

F. 100π sq cm

G. 200π sq cm

H. 300π sq cm

75.

PRICES FOR NEWSPAPER ADVERTISING

Page Space	Price
$\dfrac{1}{4}$ page	\$200
$\dfrac{1}{2}$ page	\$350
full page	\$600

The table above shows prices for newspaper advertising. A store purchased $\dfrac{1}{4}$ pages, $\dfrac{1}{2}$ pages, and full pages of page space in equal numbers for a total of \$11,500. What is the total amount of page space the store purchased?

A. $1\dfrac{3}{4}$ pages

B. 10 pages

C. $16\dfrac{1}{2}$ pages

D. $17\dfrac{1}{2}$ pages

76. How many positive odd numbers satisfy the inequality $3x + 8 \le 92$?

E. 13
F. 14
G. 17
H. 28

77. If $\dfrac{36}{y} = 4x$, what is the value of x when $y = 3$?

    A. 3
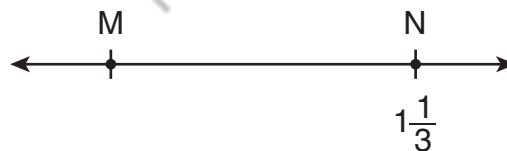   **B.** 4
    C. 9
    D. 12

78. Points $X, Y,$ and Z are on a straight line, and Y is between X and Z. Length $\overline{YZ} = \dfrac{3}{5}\overline{XY}$, and length $\overline{XY} = 20$ centimeters. What is the length of $\overline{XZ}$?

    E. 12 cm
    F. 24 cm
    G. 30 cm
    H. 32 cm

79. Bryana bought $1\dfrac{3}{4}$ yards of cloth at \$8.00 per yard. If there was an 8% sales tax, what was the total cost of the cloth?

    A. \$12.96
    B. \$14.08
    C. \$15.12
    D. \$16.08

80.

On the number line above, $MN = 5\dfrac{5}{6}$. What is the position of point M ?

    E. $-7\dfrac{1}{6}$
    F. $-4\dfrac{1}{2}$
    G. $4\dfrac{1}{2}$
    H. $7\dfrac{1}{6}$

81. A United States presidential coin is made from an alloy of four metals—copper, zinc, manganese, and nickel—with weights in the ratio of 177:12:7:4, respectively. The coin weighs a total of 8 grams. What is the weight of the zinc in this coin?

    A. 0.28 g
    B. 0.48 g
    C. 0.96 g
    D. 48 g

82. Jack scored a mean of 15 points per game in his first 3 basketball games. In his 4th game, he scored 27 points. What is his mean score for the first 4 games?

    E. 15
    F. 17
    G. 18
    H. 21

<u>START SHSAT PREP</u>

83. A cylindrical oil drum can hold 4,320 liters when it is completely full. Currently, the drum is $\frac{1}{3}$ full of oil. How many **kiloliters** of oil need to be added in order to fill the drum completely?

A. 1.44
B. 2.88
C. 4.32
D. 14.10

84. Nicole's age now is three times Carmen's age. If Carmen will be 17 in two years, how old was Nicole 5 years ago?

E. 38 yr
F. 40 yr
G. 45 yr
H. 50 yr

85. A chemical decays in such a way that the amount left at the end of each week is 20% less than the amount at the beginning of that same week. What percent of the original amount is left after two weeks?

A. 40%
B. 60%
C. 64%
D. 80%

86. If $w - 1$ is an odd integer, which one of the following **must** be an even integer?

E. $w + 1$
F. $2w - 1$
G. $2w - 2$
H. $2w + 1$

87. Three students stand at the starting line of a running track and begin running laps at the same time. Ann completes 1 lap every 2 minutes, Jack completes 1 lap every 3 minutes, and Lee completes 1 lap every 4 minutes. How many laps does Ann complete before all three runners are once again at the starting line at the same time?

A. 4
B. 6
C. 12
D. 20

88. Simplify this expression:

$$4(7 - 3x) - (5 - x)$$

E. $23 - 4x$
F. $23 - 11x$
G. $28 - 4x$
H. $28 - 12x$

START SHSAT PREP

89.

PET SURVEY

Number of Pets	Number of Students
0	12
1	16
2	7
3 or more	5

Amy surveyed students at her school about the number of pets they have. What is the probability that a student who participated in the survey has at least 2 pets?

A. $\dfrac{7}{40}$

B. $\dfrac{1}{12}$

C. $\dfrac{1}{8}$

D. $\dfrac{3}{10}$

90. A large container is partially filled with n liters of water. Ito adds 10 liters of water to the container, making it 60% full. If Ignacio adds 6 more liters of water, the container will be 75% full. What is the value of n?
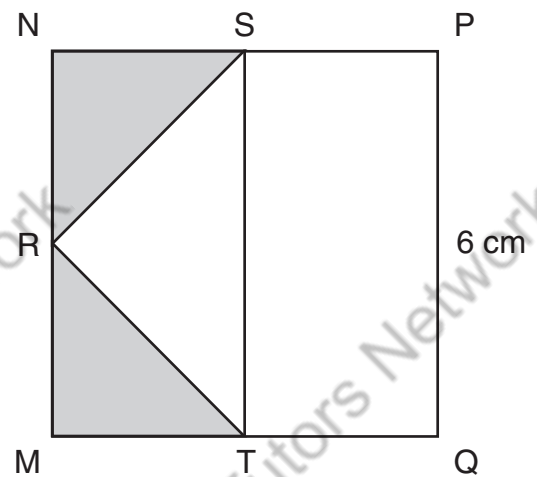
E. 14
F. 15
G. 26
H. 30

91.
$$5x^3 + 3x + 9 + \frac{1}{x^2}$$

If $x = 10$, what is the value of the expression above?

A. 2,539.01
B. 5,039.01
C. 5,039.1
D. 5,139

92.

R, S, and T are midpoints of the sides of square MNPQ, as shown above. What is the sum of the areas of the shaded triangles?

E. 9 sq cm
F. 12 sq cm
G. 18 sq cm
H. 36 sq cm

93. The Chens spend $5 of every $8 they earn on planned expenses. If the family earns $29,600 in one year, how much will they spend on planned expenses that year?

A. $1,850
B. $3,700
C. $5,920
D. $18,500

94. A pizza shop offers a choice of 3 sizes (small, medium, and large) and 7 different toppings. Different pizzas can be created by changing the size and/or the choice of toppings. If Cody wants to order a pizza with exactly 2 different toppings, how many different pizzas can he create?

    E. 6
    F. 21
    G. 63
    H. 126

95.

SURVEY OF CATS PER FAMILY

Number of Cats	Number of Families
0	15
1	42
2	35
3 or more	8

The table above shows the number of cats per family in 100 households in the Blaine neighborhood. By what **percentage** is the number of families with 1 cat greater than the number of families with 2 cats?

    A. 7%
    B. 10%
    C. 17%
    D. 20%

---

96. A wooden box has a square base. The height of this box is 3 times the length of one side of the base. If one side of the base is 3 feet long, what is the volume of this box?

    E. 9 cu ft
    F. 27 cu ft
    G. 36 cu ft
    H. 81 cu ft

---

97. On a bike trip, Rajiv traveled 65 kilometers in 5 hours, while Shaina traveled 72 kilometers in 4 hours. How much **less** was Rajiv's mean speed, in kilometers per hour (kph), than Shaina's?
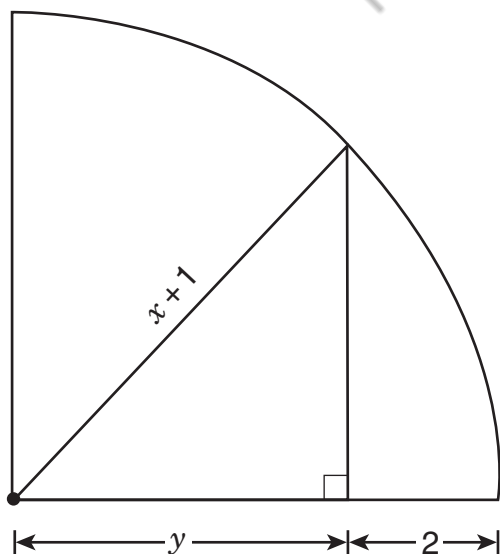
    A. 1
    B. 5
    C. 7
    D. 9

---

98. Points P, Q, R, and S represent -3, -1, 0, and 2, respectively, on a number line. How many units is the midpoint of $\overline{PQ}$ from the midpoint of $\overline{RS}$?

    E. 1
    F. 2
    G. 3
    H. 4

---

99. There are 1,000 cubic centimeters in 1 liter, and 1,000 cubic millimeters in 1 milliliter. How many cubic millimeters are there in 1,000 cubic centimeters?

    A. 1,000
    B. 10,000
    C. 100,000
    D. 1,000,000

100.

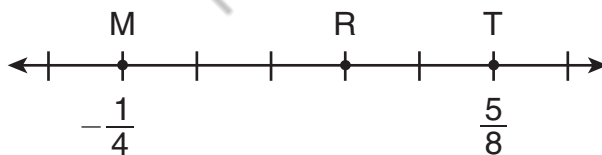In the quarter circle above, what is y in terms of x?

E. $x - 1$

F. $x + 1$

G. $\dfrac{x+1}{2}$

H. $\sqrt{\dfrac{(x+1)^2}{2}}$

101.

The hash marks on the number line above are evenly spaced. What is the coordinate of point R?

A. $\dfrac{7}{40}$

B. $\dfrac{9}{40}$

C. $\dfrac{11}{40}$

D. $\dfrac{21}{40}$

102. Phan chose an Internet service that charges $18.00 per month plus $0.024 per minute. Deion chose an Internet service that charges $30.00 per month for unlimited usage. At the end of the month, Phan's and Deion's charges were identical. For how many minutes did Phan use the Internet service that month?

E. 50

F. 60

G. 100

H. 500

103. In a sample of 50 cars at a local dealership, there are 12 red cars and 10 cars with backup cameras. Of the 12 red cars, 4 have backup cameras. If a car is selected at random from the given sample, what is the probability that **both** of the following are true: the car is **not** red and does **not** have a backup camera?

A. $\dfrac{3}{5}$

B. $\dfrac{16}{25}$

C. $\dfrac{19}{25}$

D. $\dfrac{4}{5}$

104. The decimal 0.06 can be written as the fraction $\dfrac{x}{50}$. What is the value of x?

E. 3
F. 6
G. 12
H. 30

105.
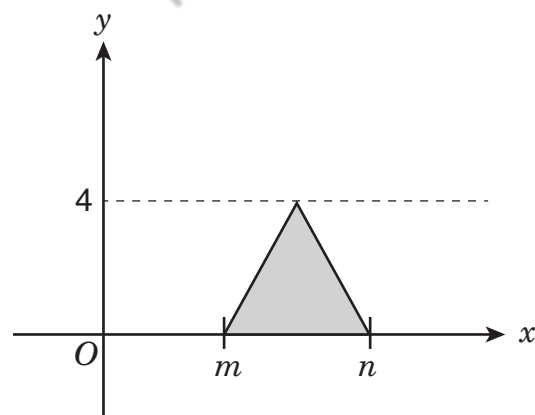
What is the area of the shaded triangle shown above?

A. $m + n$

B. $n - m$

C. $2(n - m)$

D. $4(n - m)$

106.
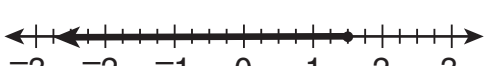
ANIMAL CARDS
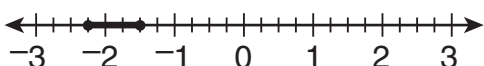
Number of Cards	Picture on Card
8	cat
6	dog
5	bird
4	fish
1	horse

The cards in the table above are mixed in a box. Which animal pictured on a card has exactly a 1 in 4 chance of being picked at random from the box?

E. cat
F. dog
G. fish
H. horse

107. Which number line below shows the solution set for $2x - 2 \leq y \leq 4x + 10$ when $y = 1$?

A.

B.

C.

D.

108.
$$\frac{14}{21} = \frac{p}{7}$$

In the equation above, what is the value of p?

E. $\dfrac{2}{3}$

F. 3

G. $\dfrac{14}{3}$

H. 14

109. A ball is selected at random from a box that contains 7 black balls, 14 green balls, and 21 red balls. What is the probability that the ball selected is black?

A. $\dfrac{1}{6}$

B. $\dfrac{1}{5}$

C. $\dfrac{1}{3}$

D. $\dfrac{5}{6}$

110. At North High School, a survey asked two questions, Question A and Question B. For each question, students could answer either "yes" or "no." Of the 800 students who responded to the survey, 720 answered "yes" to Question A, and 640 answered "yes" to Question B. What is the **least** possible number of these students who could have answered "yes" to **both** questions?

E. 80
F. 160
G. 560
H. 640

DISTRIBUTION OF EYE AND HAIR COLOR
FOR 84 CHILDREN

		Eye Color		
		Brown	Blue	Total
Hair Color	Blond			
	Black			

The table above shows the distribution of eye color and hair color for 84 children. How many of these children have blond hair or brown eyes, but **not both**?

F.
G.
H.
J.
K.

TEST SCORES FOR 17 STUDENTS

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

F.
G.
H.
J.
K.

What is the solution to

A.
B.
C.
D.
E.

Which of the following shows the fractions in order from least to greatest?

F.
G.
K.

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

A.
B.
C.
D.
E.

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