

The New York City Department of Education
2022 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:

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 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: Print your student ID number in Grid 7. 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.

Grid 8: In most cases, Grid 8 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.

**DO NOT OPEN THIS BOOKLET
 UNTIL YOU ARE TOLD TO DO SO.
 TURN YOUR BOOKLET OVER TO THE BACK COVER.**

GENERAL DIRECTIONS, continued

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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PART 1 — ENGLISH LANGUAGE ARTS

57 QUESTIONS

REVISING/EDITING

QUESTIONS 1-10 (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. Read these sentences.

- (1) Flyby missions near Jupiter have been happening since 1973.
- (2) Flyby missions allow scientists to collect data about Jupiter and its moons.

What is the best way to combine the sentences to clarify the relationship between the ideas?

- A. While flyby missions near Jupiter have been happening since 1973, scientists collect data about the planet and its moons.
- B. Although there have been flyby missions near Jupiter since 1973, they have allowed scientists to collect data about the planet and its moons.
- C. Flyby missions near Jupiter, which allow scientists to collect data about the planet and its moons, have been happening since 1973.
- D. Flyby missions have been happening near Jupiter, but scientists have been collecting data about the planet and its moons since 1973.

2. Which sentence contains an error in its construction and should be revised?

(1) In 1976, the National Basketball Association (NBA) absorbed several teams of the American Basketball Association (ABA), including the New York Nets, who played in the Long Island area at the time. (2) The owner of the Nets decided to take the team to New Jersey after the team had financial troubles, where the team played for thirty-five seasons. (3) The New Jersey Nets had sixteen playoff appearances, including two appearances in the NBA finals. (4) In 2012, the team changed ownership and returned to New York, where the team now plays under the name the Brooklyn Nets.

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

3. How should the paragraph be revised?

(1) Danielle spent several hours preparing for an upcoming audition for a play at the community theater. (2) First she did vocal exercises to practice her diction and projection so that her words would carry clearly throughout the large auditorium. (3) Then she studies the text of the monologue to better understand the emotions, and motivations of the character she plans to portray. (4) Finally she recited her monologue in front of a mirror many times, making slight adjustments and improvements to her performance each time.

- A. Sentence 1: Change **spent** to **had spent**, AND insert a comma after **play**.
- B. Sentence 2: Change **did** to **does**, AND insert a comma after **projection**.
- C. Sentence 3: Change **studies** to **studied**, AND delete the comma after **emotions**.
- D. Sentence 4: Change **recited** to **recites**, AND delete the comma after **times**.

4. Which pair of revisions needs to be made in this paragraph?

(1) Both Italian gelato and American ice cream are delightful treats to have on a hot summer day, but many people wonder: what is the difference between the two? (2) To start with, the butterfat content is much higher in ice cream than it is in gelato, making the Italian treat a wiser decision for people looking to make healthier choices. (3) Additionally, the mixing process, which adds less air to the frozen treat, makes gelato denser than ice cream. (4) Finally, gelato is served 10 to 15 degrees warmer than ice cream, which enhances the texture and flavor of the gelato, and allow it to melt more quickly.

- E. Sentence 1: Delete the colon after **wonder** AND change **is** to **are**.
F. Sentence 2: Delete the comma after **with** AND change **it is** to **they are**.
G. Sentence 3: Delete the comma after **process** AND change **makes** to **make**.
H. Sentence 4: Delete the comma after **gelato** AND change **allow** to **allows**.

CONTINUE TO THE NEXT PAGE ►

REVISING/EDITING PART B

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 reread relevant parts of the text, while being mindful of time, before marking the best answer for each question.

Martial Arts for the Mind and Body

(1) The martial arts blend a series of physical movements with strategic mental discipline so that practitioners can defend themselves, physically defeat an opponent, or both. (2) Historians are unsure of exactly when and where martial arts were first used. (3) Martial arts have been practiced by several different societies for many centuries. (4) Martial arts such as karate, kung fu, tae kwon do, and judo are still taught and practiced as methods of self-defense, but they offer students more than that. (5) The study of martial arts can provide students with a way to enhance their mental discipline as well as their physical fitness.

(6) Discipline, focus, and respect are important qualities for everyone to have. (7) However, for most people these qualities are not innate; they must be learned and practiced. (8) The study of martial arts can provide an opportunity to develop these skills. (9) Students are rewarded for their dedication by passing tests and advancing to higher levels. (10) For example, in a typical tae kwon do class, students learn discipline by diligently practicing moves, improve focus by listening carefully, and demonstrate respect by bowing to the instructor and following directions.

(11) For teenagers, martial arts classes provide a safe and structured environment for gaining physical skills, building confidence, and enjoying a sense of community. (12) A lot of teens go through hard situations as they try to do well in school and in life. (13) A karate class can provide teens with a physical outlet for stress while also challenging them mentally. (14) Participating in a martial arts program also helps children and teens focus on self-improvement rather than on competition. (15) Progressing through levels of achievement involves mastering more physically demanding techniques. (16) It requires students to take responsibility and be accountable for achieving set goals. (17) Students gain confidence and experience companionship with other students who are progressing through the ranks.

(18) Adults who practice martial arts can experience many of the same benefits that younger people do, but perhaps the greatest of these is health and fitness. (19) Adult martial arts students often see changes in their body within weeks of beginning a program.

(20) For people interested in studying a martial art, there are many ways to learn and practice. (21) In addition to private studios, community recreation centers often offer low-cost or free martial arts classes. (22) There are even online videos that introduce students to the basic concepts. (23) People should study martial arts.

5. What is the best way to combine sentences 2 and 3?
- A. Historians, who are unsure of exactly when and where martial arts were first used, know that martial arts have been practiced by several different societies for many centuries.
 - B. While historians are unsure of exactly when and where martial arts were first used, they do know that martial arts have been practiced by several different societies for many centuries.
 - C. Because historians know that martial arts have been practiced by several different societies for many centuries, they are unsure of exactly when and where martial arts were first used.
 - D. Martial arts have been practiced by several different societies for many centuries, and historians are unsure of exactly when and where martial arts were first used.
6. Where should sentence 10 be moved to improve the organization of the second paragraph (sentences 6–10)?
- E. to the beginning of the paragraph (before sentence 6)
 - F. between sentences 6 and 7
 - G. between sentences 7 and 8
 - H. between sentences 8 and 9
7. Which revision of sentence 12 best maintains the formal style established in the passage?
- A. A lot of teens have to put up with difficult things while trying to do well in school and in life.
 - B. Many teenagers deal with tough situations as they try to stay on top of their studies and do well in life.
 - C. Many teenagers encounter challenges as they work to succeed both academically and personally.
 - D. A lot of teens face problems as they work to keep up with their schoolwork and find personal success.
8. Which transitional phrase should be added to the beginning of sentence 17?
- E. Over time
 - F. In fact
 - G. Even so
 - H. For instance

- 9.** Which sentence would best follow and support sentence 18?
- A.** Adult students gain discipline, focus, self-control, and respect, which are qualities that help them advance in their careers.
 - B.** Many adults initially train in a martial art simply to get exercise without realizing that the training also helps develop other skills.
 - C.** The exercise involved in training helps people strengthen their heart, boost endurance, improve balance, and develop muscle tone.
 - D.** People who commit to training in the martial arts are usually concerned about improving their overall physical health.
- 10.** Which concluding sentence should replace sentence 23 to best support the topic presented in the passage?
- E.** With so many ways to begin studying martial arts, people can easily discover how the skills needed to progress in rank may help them in life.
 - F.** By taking advantage of opportunities to practice martial arts, people can experience the satisfaction of achieving goals while also improving themselves.
 - G.** Because people are eager to reap the mental and physical benefits of studying martial arts, enrollment in martial arts courses has increased.
 - H.** While taking martial arts classes can improve health for both young people and adults, the effects are clearly more immediate for adults.

READING COMPREHENSION

QUESTIONS 11–57

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 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 ►

Wolves of the Sea

- 1 The cool and misty landscape of the Great Bear Rainforest can be found along the coast of British Columbia, Canada, and its nearby islands, from Vancouver Island to the Alaskan border. Within this protected area, wolves roam the forests, islands, and beaches. When biologist Chris Darimont began to study these wolves, he wanted to confer with local First Nations groups, as aboriginal Canadians are known, in order to learn what they knew about these wolves. He spoke with Chester Starr, an elder of the Heiltsuk Nation that has occupied the Great Bear Rainforest for thousands of years. What Starr had to say about the wolves changed Darimont's perception of the animals.
- 2 Starr asked Darimont which wolves he and his team were going to study—the timber wolves (mainland wolves) or the coastal wolves on the islands. The question took Darimont by surprise. Biologists had always believed that the wolves that are sometimes spotted swimming between islands and eating salmon are the same wolves that live on the mainland. Darimont was intrigued by Starr's classification of the wolves as two different groups. At first, he was hesitant to accept the idea. The distances between the mainland and the islands are small, less than a mile. Why would the wolves on the islands be any different from the wolves on the mainland? To find out, Darimont and his research team studied the wolves on the islands and in the densely forested territory of the Great Bear Rainforest for ten years.
- 3 Throughout the study, Darimont recorded several significant, observable differences between the "sea wolves," as they are nicknamed, and the mainland wolves. Compared with the mainland wolves, the sea wolves are smaller in size and are strong swimmers. In 1996 sea wolves were spotted on an island nearly eight miles from any other land formation. While mainland wolves almost exclusively eat meat, such as deer and elk, and teach their young to hunt for land animals, sea wolves get as much as 90 percent of their nutrition from the sea and teach their young to dig for clams and to catch fish. Sea wolves regularly swim between islands and have been known to sneak up on a seal sunning itself on a rock and make a leaping attack from the water. Some salmon-eating mainland wolves come and go from the islands with the fish-spawning season, but the sea wolves are full-time island residents. Darimont suspects that some sea wolves live their entire life on the islands.
- 4 The sea wolves displayed not only physical and behavioral differences but also genetic variations from the mainland wolves. After collecting and analyzing the DNA in 800 samples of gray fur and wolf waste, researchers could produce hard biological evidence that sea wolves had genetic markers that made them distinct from the mainland wolves. A genetic marker is a variation in a DNA sequence that can be used to identify individuals or a species because it is passed down to offspring. Darimont hypothesizes that a change in habitat led to the eventual genetic differences between sea wolves and mainland wolves. Many years ago, loss of habitat and food sources forced some mainland wolves out to the islands. They learned to eat everything from kelp and fish eggs to the remains of sea creatures that washed up on the beach. Wolves living on the islands and mainland wolves became more isolated and rarely mated with each other. Over time the two types of wolves became more distinct.
- 5 It turned out that Chester Starr was right all along. "It sounded totally bizarre at first," admits Darimont, "that there could be two versions of the species." But he now realizes that this skepticism "definitely reflected my ignorance of indigenous knowledge at the time." Learning to trust the wisdom of the Heiltsuk people opened Darimont up to knowledge accumulated over

millennia and positioned him so that he could gather new scientific evidence about one of British Columbia's most elusive species, the sea wolf.

11. The details in paragraph 1 contribute to a central idea of the passage by showing that Darimont
- A. believed the Great Bear Rainforest was an ideal location to study wolves in their natural habitat because it is a protected area.
 - B. values different perspectives, because the information that Starr provided influenced the focus of Darimont's research.
 - C. thought the Great Bear Rainforest would provide opportunities to study different groups of wolves because the area includes forests and islands.
 - D. understands the importance of respecting local community members, because Darimont sought permission from an elder of the Heiltsuk Nation before starting his research.
12. Why does the author include details about the conversation between Starr and Darimont in paragraph 2?
- E. to explain why Starr had closely observed the relationship between the two groups of wolves Darimont wanted to study
 - F. to show that Darimont was hoping to work with Starr and to study both groups of wolves in the area
 - G. to highlight that Darimont was unfamiliar with the area and expected Starr to help him find wolves to study
 - H. to emphasize that the question asked by Starr caused Darimont to review his initial assumption about the wolves

13. Read this sentence from paragraph 4.

After collecting and analyzing the DNA in 800 samples of gray fur and wolf waste, researchers could produce hard biological evidence that sea wolves had genetic markers that made them distinct from the mainland wolves.

The phrase "hard biological evidence" conveys that the goal of the research team was to

- A. develop a procedure in order to ensure their study yielded plentiful data about the wolves.
- B. seek definitive scientific proof of the number of wolf species present in the area of the study.
- C. conduct a study to evaluate multiple theories about the diets of different wolf species.
- D. discover if the new data would provide information different from that of previous studies.

- 14.** The author uses the word “admits” in paragraph 5 most likely to
- E.** note that Darimont’s genetic research verified a theory based solely on field observations.
 - F.** imply that Darimont’s study was disappointing because the conclusion that he reached was not original.
 - G.** emphasize that Darimont’s study ultimately confirmed an idea that he had initially doubted.
 - H.** highlight that Darimont’s results led him to draw a conclusion from his research that his team did not agree with.
- 15.** Which sentence from the passage best supports the idea that sea wolves had successfully adapted to living on the islands?
- A.** “While mainland wolves almost exclusively eat meat, such as deer and elk, and teach their young to hunt for land animals, sea wolves get as much as 90 percent of their nutrition from the sea and teach their young to dig for clams and to catch fish.” (paragraph 3)
 - B.** “Sea wolves regularly swim between islands and have been known to sneak up on a seal sunning itself on a rock and make a leaping attack from the water.” (paragraph 3)
 - C.** “Darimont suspects that some sea wolves live their entire life on the islands.” (paragraph 3)
 - D.** “Darimont hypothesizes that a change in habitat led to the eventual genetic differences between sea wolves and mainland wolves.” (paragraph 4)
- 16.** How did a change in habitat most affect the wolf population of the Great Bear Rainforest over time?
- E.** It caused some of the wolves to learn new hunting techniques in order to catch increasingly scarce prey.
 - F.** It caused the wolves to form smaller packs and eventually separate, establishing distinct territories.
 - G.** It caused some of the wolves to gradually become a new, genetically distinct species as they adapted behaviorally.
 - H.** It caused the wolves to adapt their diet as different food sources became available in the area.

CONTINUE TO THE NEXT PAGE ►

In 1903 brothers Wilbur and Orville Wright conducted various experiments related to flying machines. These experiments would eventually lead to air travel becoming a reliable form of transportation.

Excerpt from “How We Made the First Flight”

by Orville Wright

- 1 During the night of December 16, 1903, a strong cold wind blew from the north. When we arose on the morning of the 17th, the puddles of water, which had been standing about camp since the recent rains, were covered with ice. The wind had a velocity of 10 to 12 meters per second (22 to 27 miles an hour). We thought it would die down before long, and so remained indoors the early part of the morning. But when ten o'clock arrived, and the wind was as brisk as ever, we decided that we had better get the machine out and attempt a flight. We hung out the signal for the men of the Life Saving Station.¹ We thought that by facing the flyer into a strong wind, there ought to be no trouble in launching it from the level ground about camp. We realized the difficulties of flying in so high a wind, but estimated that the added dangers in flight would be partly compensated for by the slower speed in landing.

Final Preparations

- 2 We laid the track on a smooth stretch of ground about one hundred feet north of the new building. The biting cold wind made work difficult, and we had to warm up frequently in our living room, where we had a good fire in an improvised stove made of a large carbide² can. By the time all was ready, J. T. Daniels, W. S. Dough and A. D. Etheridge, members of the Kill Devil³ Life Saving Station; W. C. Brinkley of Manteo, and Johnny Moore, a boy from Nags Head,⁴ had arrived.
- 3 We had a “Richard” hand anemometer with which we measured the velocity of the wind. Measurements made just before starting the first flight showed velocities of 11 to 12 meters per second, or 24 to 27 miles per hour. . . .

Audacity—and Calculation

- 4 Wilbur having used his turn in the unsuccessful attempt on the 14th, the right to the first trial now belonged to me. After running the motor a few minutes to heat it up, I released the wire that held the machine to the track, and the machine started forward in the wind. Wilbur ran at the side of the machine, holding the wing to balance it on the track. Unlike the start on the 14th, made in a calm, the machine, facing a 27-mile wind, started very slowly. Wilbur was able to stay with it till it lifted from the track after a forty-foot run. One of the Life Saving men snapped the camera for us, taking a picture just as the machine had reached the end of the track and had risen to a height of about two feet. The slow forward speed of the machine over the ground is clearly shown in the picture by Wilbur's attitude. He stayed along beside the machine without any effort.

¹**Life Saving Station:** one of the rescue stations along the Atlantic coastline that provided assistance to mariners in distress

²**carbide:** a very hard material composed of carbon and other heavy metals

³**Kill Devil:** the town of Kill Devil Hills in eastern North Carolina

⁴**Nags Head:** a town in eastern North Carolina

Flight

- 5 The course of the flight up and down was exceedingly erratic, partly due to the irregularity of the air, and partly to lack of experience in handling this machine. The control of the front rudder was difficult on account of its being balanced too near the center. This gave it a tendency to turn itself when started; so that it turned too far on one side and then too far on the other. As a result the machine would rise suddenly to about ten feet, and then as suddenly dart for the ground. A sudden dart when a little over a hundred feet from the end of the track, or a little over 120 feet from the point at which it rose into the air, ended the flight. As the velocity of the wind was over 35 feet per second and the speed of the machine over the ground against this wind ten feet per second, the speed of the machine relative to the air was over 45 feet per second, and the length of the flight was equivalent to a flight of 540 feet made in calm air. This flight lasted only 12 seconds, but it was nevertheless the first in the history of the world in which a machine carrying a man had raised itself by its own power into the air in full flight, had sailed forward without reduction of speed and had finally landed at a point as high as that from which it started.

From "How We Made the First Flight" by Orville Wright—Public Domain/Federal Aviation Administration

17. How does paragraph 1 introduce the idea that the Wright brothers knew that their flight attempt was risky?
- A. through the mention of a signal to notify lifesaving experts that the flight attempt was about to begin
 - B. by providing specific details about the speed of the wind and the Wright brothers' response to the windy conditions
 - C. by suggesting that a slower landing would be necessary at the end of the flight in order to maintain safety
 - D. through the indication that the Wright brothers waited indoors for most of the morning because of the poor weather

18. Read this sentence from paragraph 4.

Wilbur having used his turn in the unsuccessful attempt on the 14th, the right to the first trial now belonged to me.

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

- E.** demonstrating the challenge of the extreme winter conditions during the flight.
 - F.** revealing how many tries it took for Wilbur Wright to finally get the machine to take flight.
 - G.** demonstrating that both Orville and Wilbur Wright were eager to pilot what could potentially be the first flight.
 - H.** suggesting a sense that both brothers felt confident they would soon succeed in completing the first flight.
- 19.** The photograph mentioned in paragraph 4 is significant because it
- A.** documents that the machine rose into the air as soon as the tethering wire was released.
 - B.** provides proof of the critical moment the machine took flight.
 - C.** documents that the wind reduced the speed of the plane at the start of the flight.
 - D.** provides proof that the pilot had to gradually increase the height of the plane in the air.
- 20.** How do the details in paragraph 5 about the uneven nature of the flight convey a central idea of the excerpt?
- E.** by explaining how the flawed design of the machine caused it to turn unpredictably in the air and brought the first flight by a person to an abrupt end
 - F.** by indicating that the difficulty in controlling the flight was caused by the rudimentary instruments of the machine and the inexperience of the pilot
 - G.** by explaining how the pilot and the plane overcame adverse conditions in order to complete the first piloted flight
 - H.** by indicating that the gradual change in wind velocity created an extreme environment in which to maneuver the plane and maintain its flight

21. Read this sentence from paragraph 5.

As the velocity of the wind was over 35 feet per second and the speed of the machine over the ground against this wind ten feet per second, the speed of the machine relative to the air was over 45 feet per second, and the length of the flight was equivalent to a flight of 540 feet made in calm air.

How does the sentence help convey Orville Wright's perspective about this first flight?

- A. It suggests that he was frustrated by the poor flying conditions on the day of the flight.
- B. It emphasizes that he believed the flight was successful despite its short distance.
- C. It provides a comparison between flight distances under calm and high wind conditions.
- D. It highlights the importance of such calculations in the success of future flights.

22. Read this sentence from paragraph 5.

A sudden dart when a little over a hundred feet from the end of the track, or a little over 120 feet from the point at which it rose into the air, ended the flight.

How does the sentence contribute to the paragraph?

- E. It details the need for the pilot to have quick reflexes while flying the machine.
- F. It presents the idea that the difficulty of operating the machine shortened the flight.
- G. It describes the shift in wind speed that made flying nearly impossible.
- H. It provides an overview of the flight's progression from takeoff to landing.

23. Read this sentence from paragraph 5.

This flight lasted only 12 seconds, but it was nevertheless the first in the history of the world in which a machine carrying a man had raised itself by its own power into the air in full flight, had sailed forward without reduction of speed and had finally landed at a point as high as that from which it started.

The words "only," "nevertheless," and "finally" most clearly convey the idea that

- A. even a flight of such minor duration had taken a long time to achieve.
- B. the short flight gave the Wright brothers hope for longer ones in the future.
- C. the flight proved that the machine was, at last, capable of becoming airborne.
- D. although it was brief, the flight was a remarkable accomplishment.

- 24.** Which sentence from the excerpt best supports the idea that the Wright brothers had to adapt their plans for the flight in order to accommodate the weather conditions?
- E.** "When we arose on the morning of the 17th, the puddles of water, which had been standing about camp since the recent rains, were covered with ice." (paragraph 1)
 - F.** "We realized the difficulties of flying in so high a wind, but estimated that the added dangers in flight would be partly compensated for by the slower speed in landing." (paragraph 1)
 - G.** "After running the motor a few minutes to heat it up, I released the wire that held the machine to the track, and the machine started forward in the wind." (paragraph 4)
 - H.** "The course of the flight up and down was exceedingly erratic, partly due to the irregularity of the air, and partly to lack of experience in handling this machine." (paragraph 5)
- 25.** The use of chronological structure contributes to the development of ideas in the excerpt by
- A.** outlining the actions that the Wright brothers took to prepare for and successfully complete the first flight.
 - B.** identifying the primary factors that allowed the Wright brothers to overcome obstacles and achieve the first flight.
 - C.** showing how the Wright brothers applied lessons learned from their previous flight attempts to accomplish the first flight.
 - D.** demonstrating how the Wright brothers analyzed the impact of wind velocity to identify the ideal conditions for the first flight.

CONTINUE TO THE NEXT PAGE ►

In this excerpt, published in 1914, author and professor Dallas Lore Sharp describes a summer cattle roundup in Oregon. The heat and dust had been relentless for three days. The cowboys were exhausted, and the cattle were restless. The ranch boss, Wade, had led the drive to a watering place, only to find it empty.

Excerpt from "The Spirit of the Herd"

by Dallas Lore Sharp

- 1 Along with the wagon had come the fresh horses—one of them being Peroxide Jim, a supple, powerful, clean-limbed buckskin, a horse, I think, that had as fine and intelligent an animal-face as any creature I ever saw. Wade had been saving this horse for emergency work. And why should he not have been saved fresh for just such a need as this? Are there not superior horses as well as superior men—a Peroxide Jim to complement a Wade?
- 2 The horse knew the cattle business and knew his rider perfectly; and though there was nothing like sentiment about the boss of the P Ranch riders, his faith in Peroxide Jim was complete. . . .
- 3 The desert, where the herd was camped, was one of the highest of a series of tablelands,¹ or benches; it lay as level as a floor, rimmed by sheer rock, from which there was a drop to the bench of sage below. The herd when overtaken by the dusk had been headed for a pass descending to the next lower bench, but was now halted within a mile of the rim rock on the east, where there was a perpendicular fall of about three hundred feet. . . .
- 4 In the taut silence of the stirless desert night, with the tension of the herd at the snapping-point, any quick, unwonted sight or sound would stampede them. The sneezing of a horse, the flare of a match, would be enough to send the whole four thousand headlong—blind, frenzied, trampling—till spent and scattered over the plain.
- 5 And so, as he rode, Wade began to sing. The rider ahead of him took up the air and passed it on until, above the stepping stir of the hoofs rose the faint voices of the men, and all the herd was bound about by the slow plaintive measures of some old song. It was not to soothe their savage breasts that the riders sang to the cattle, but rather to preempt the dreaded silence, to relieve the tension, and so to prevent the shock of any sudden startling noise.
- 6 So they sang and rode and the night wore on to one o'clock, when Wade, coming up on the rim-rock side, felt a cool breeze fan his face, and caught a breath of fresh, moist wind with the taste of water in it.
- 7 He checked his horse instantly, listening as the wind swept past him over the cattle. But they must already have smelled it, for they had ceased their milling, the whole herd standing motionless, the indistinct forms close to him in the dark showing their bald faces lifted to drink the sweet wet breath that came over the rim. Then they started on again, but faster, and with a rumbling now from their hoarse throats that tightened Wade's grip on the reins.
- 8 The sound seemed to come out of the earth, a low, rumbling mumble, as dark as the night and as wide as the plain, a thick, inarticulate bellow that stood every rider stiff in his stirrups. . . .

¹**tablelands:** plateaus, flat areas of land sharply elevated from the surrounding area

- 9 Then the breeze caught the dust and carried it back from the gray-coated, ghostly shapes, and Wade saw that the animals were still moving in a circle. He must keep them going. He touched his horse to ride on with them, when across the black sky flashed a vivid streak of lightning.
- 10 There was a snort from the steers, a quick clap of horns and hoofs from far within the herd, a tremor of the plain, a roar, a surging mass—and Wade was riding the flank of a wild stampede. Before him, behind him, beside him, pressing hard upon his horse, galloped the frenzied steers, and beyond them a multitude borne on, and bearing him on, by the heave of the galloping herd.
- 11 Wade was riding for his life. He knew it. His horse knew it. He was riding to turn the herd, too, back from the rim, as the horse also knew. The cattle were after water—water-mad—ready to go over the precipice to get it, carrying horse and rider with them. Wade was the only rider between the herd and the rim. It was black as death. He could see nothing in the sage, could scarcely discern the pounding, panting shadows at his side. He knew that he was being borne toward the rim, how fast he could not tell, but he knew by the swish of the brush against his tapaderos² and the plunging of the horse that the ground was growing stonier, that they were nearing the rocks.
- 12 To outrun the herd was his only chance for life. If he could come up with the leaders he might not only escape, but even stand a chance of heading them off upon the plain and saving the herd. There were cattle still ahead of him; how many, what part of them all, he could not make out in the dark. But the horse knew. The reins hung on his straight neck, where his rider had dropped them, as, yelling and firing over the wild herd, he had given this horse the race to win, to lose.
- 13 They were riding the rim. Close on their left bore down the flank of the herd, and on their right, under their very feet, was a precipice, so close that they felt its blackness—its three hundred feet of fall! . . .
- 14 . . . Then Wade found himself racing neck and neck with a big white steer, which the horse, with marvelous instinct, seemed to pick out from a bunch, and to cling to, forcing him gradually ahead, till, cutting him free from the bunch entirely, he bore him off into the swishing sage.
- 15 The steers coming on close behind followed their leader, and in, after them, swung others. The tide was turning from the rim. More and more were veering, and within a short time the whole herd, bearing off from the cliffs, was pounding over the open plains.
- 16 Whose race was it? It was Peroxide Jim's, according to Wade, for not by word or by touch of hand or knee had the horse been directed in the run. From the flash of the lightning the horse had taken the bit, had covered an indescribably perilous path at top speed, had outrun the herd and turned it from the edge of the rim rock, without a false step or a tremor of fear.

From "The Spirit of the Herd" by Dallas Lore Sharp—Public Domain

²**tapaderos:** leather covers for stirrups

- 26.** Which sentence from the excerpt best explains why Wade reserved Peroxide Jim for “emergency work” (paragraph 1)?
- E.** “Are there not superior horses as well as superior men—a Peroxide Jim to complement a Wade?” (paragraph 1)
 - F.** “Before him, behind him, beside him, pressing hard upon his horse, galloped the frenzied steers, and beyond them a multitude borne on, and bearing him on, by the heave of the galloping herd.” (paragraph 10)
 - G.** “He knew that he was being borne toward the rim, how fast he could not tell, but he knew by the swish of the brush against his tapaderos and the plunging of the horse that the ground was growing stonier, that they were nearing the rocks.” (paragraph 11)
 - H.** “From the flash of the lightning the horse had taken the bit, had covered an indescribably perilous path at top speed, had outrun the herd and turned it from the edge of the rim rock, without a false step or a tremor of fear.” (paragraph 16)
- 27.** Paragraphs 1–2 contribute to the development of the central idea of the excerpt by
- A.** revealing the respect Wade had for his horse.
 - B.** emphasizing Wade’s high expectations of his horse and himself.
 - C.** indicating that Wade and his horse understood the cattle business.
 - D.** demonstrating Wade’s ability to gauge a horse’s competence.
- 28.** How does paragraph 3 convey the effect of the setting on the cattle drive?
- E.** It shows how the growing darkness created challenges for the riders in getting the herd to move.
 - F.** It describes how the changing elevation contributed to the dangerousness of the environment.
 - G.** It describes how the desert created an uncomfortable feeling of isolation for the riders and the cattle.
 - H.** It shows how the steep terrain made it difficult for the cattle to keep moving forward.

29. How does paragraph 9 fit into the overall structure of the excerpt?

- A. It hints at the change in the setting that caused Wade to suddenly become alert.
- B. It creates a false sense of calm that shows how unprepared the men were for what was about to happen.
- C. It introduces the idea that Wade was a skillful leader in unpredictable circumstances.
- D. It presents the incident that caused the main conflict Wade and Peroxide Jim addressed.

30. Read this sentence from paragraph 13.

Close on their left bore down the flank of the herd, and on their right, under their very feet, was a precipice, so close that they felt its blackness—its three hundred feet of fall!

The phrase “bore down the flank of the herd” conveys that Wade

- E. struggled to see the front of the herd.
- F. had to ride quickly to keep up with the herd.
- G. was forced to ride between the edge of the cliff and the herd.
- H. knew that the drop of the cliff would frighten the herd.

31. Read these sentences from the excerpt.

He was riding to turn the herd, too, back from the rim, as the horse also knew.
(paragraph 11)

It was Peroxide Jim’s, according to Wade, for not by word or by touch of hand or knee had the horse been directed in the run. (paragraph 16)

How do these sentences develop a central idea in the excerpt?

- A. They suggest that Wade would have been unable to save the herd without Peroxide Jim.
- B. They imply that Wade spent many hours training Peroxide Jim to herd cattle.
- C. They show that Peroxide Jim was able to understand a situation and take action.
- D. They indicate that Peroxide Jim was unafraid of the dangers presented by the stampede and the cliff.

- 32.** How do the details in paragraphs 14–16 help convey a central idea of the excerpt?
- E.** They highlight Peroxide Jim’s natural ability to control the herd.
 - F.** They emphasize the danger of the situation from which Peroxide Jim rescued the herd.
 - G.** They show that Peroxide Jim’s physical strength allowed him to force the herd to turn.
 - H.** They indicate that Peroxide Jim anticipated the herd’s stampede before the men did.
- 33.** Which sentence from the excerpt best reveals the mood on the drive before the lightning struck?
- A.** “The herd when overtaken by the dusk had been headed for a pass descending to the next lower bench, but was now halted within a mile of the rim rock on the east, where there was a perpendicular fall of about three hundred feet.” (paragraph 3)
 - B.** “It was not to soothe their savage breasts that the riders sang to the cattle, but rather to preempt the dreaded silence, to relieve the tension, and so to prevent the shock of any sudden startling noise.” (paragraph 5)
 - C.** “He checked his horse instantly, listening as the wind swept past him over the cattle.” (paragraph 7)
 - D.** “Then the breeze caught the dust and carried it back from the gray-coated, ghostly shapes, and Wade saw that the animals were still moving in a circle.” (paragraph 9)

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A Miracle Mile

- 1 In the 1950s people compared running one mile in four minutes to scaling Mount Everest and nicknamed the feat a “dream mile.” Although such an accomplishment was considered humanly impossible, several elite runners aimed to break that supposedly impenetrable barrier. One of them was a twenty-five-year-old medical student named Roger Bannister.
- 2 Roger Bannister had tasted failure during the 1952 Olympics. There, he was favored to win the 1,500-meter competition, a distance slightly shorter than a mile, but he finished in a dismal fourth place instead. Bannister’s performance was a disappointment for him and his country, Great Britain. Determined to redeem himself, Bannister postponed his plans to retire from racing and focused on the ultimate prize—breaking the four-minute-mile barrier.
- 3 Bannister attacked the elusive milestone with a positive attitude and logical planning. The amateur athlete decided to use intensive interval training to develop endurance and speed. For these workouts, Bannister ran an interval of ten consecutive laps on a quarter-mile track, aiming for sixty seconds each lap. In between intervals, he let his body recover for two minutes.
- 4 By early 1954, Bannister had succeeded in lowering his quarter-mile pace to sixty-one seconds, but he had to shave off at least one more second in order to reach his target. Frustrated by the plateau he had reached, Bannister took a break from training and went mountain climbing for three days. The rest from running permitted his muscles to recuperate and left him feeling refreshed. When Bannister returned to the track, he completed ten quarter-mile-long intervals at fifty-nine seconds each. He finally felt prepared to attempt to break the world record.
- 5 As a member of the Amateur Athletic Association (AAA), Bannister joined the AAA team for a track meet against Oxford University. The event took place on a cinder track in Oxford on May 6, 1954. Bannister and his two AAA teammates, Chris Chataway and Chris Brasher, were close friends and frequent running partners. Chataway and Brasher agreed to help Bannister accomplish his goal by being his “rabbits.”
- 6 In track and field, rabbits are runners who enter the race solely to pace a teammate for a segment of the course. Typically, a runner settles in behind the rabbit and allows the rabbit to set an appropriate tempo. Additionally, by running behind the rabbit, the runner conserves about 15 percent of his or her effort. When the starting pistol fired, Brasher pounced into the lead, and Bannister followed behind his first rabbit.
- 7 Propelled by the excitement, Bannister lost his instinctive feel for his pace and shouted “Faster!” at Brasher. Brasher, however, remained composed and maintained his current steady but grueling pace, completing the first two laps in a desirable one minute and fifty-eight seconds. Then Chataway surged forward, leading Bannister at this same punishing rate for another lap and a half. At the beginning of the back straightaway of the track, Bannister bolted past Chataway. Bannister said, “I felt that the moment of a lifetime had come. There was no pain, only a great unity of movement and aim.” Bannister crossed the finish line in 3 minutes 59.4 seconds. The ecstatic crowd erupted the moment the timekeeper announced the word “three.”
- 8 Soon after Bannister’s achievement, four other athletes matched his performance. A new mindset had taken root among runners. Over the years, the record continued to fall. However, the current record, 3 minutes 43.13 seconds, has stood unbroken since 1999. Some question whether this

record represents the limits of human ability. But perhaps there is another Bannister, an athlete who, with willpower and dedication, will accomplish the miraculous.

34. The words “feat,” “humanly impossible,” and “impenetrable barrier” in paragraph 1 affect the tone of the paragraph because they
- E. highlight the idea that only the most skilled runners would be able to run a four-minute mile.
 - F. emphasize the idea that running a mile in less than four minutes was a seemingly unattainable goal.
 - G. convey the competitiveness among elite runners to consistently set and break speed records.
 - H. show the intensity of the training programs athletes endure in order to achieve their goals.
35. Which sentence best supports the idea that Bannister needed an alternative to “logical planning” (paragraph 3) in order to accomplish his goal?
- A. “Bannister’s performance was a disappointment for him and his country, Great Britain.” (paragraph 2)
 - B. “The amateur athlete decided to use intensive interval training to develop endurance and speed.” (paragraph 3)
 - C. “For these workouts, Bannister ran an interval of ten consecutive laps on a quarter-mile track, aiming for sixty seconds each lap.” (paragraph 3)
 - D. “Frustrated by the plateau he had reached, Bannister took a break from training and went mountain climbing for three days.” (paragraph 4)
36. Read these sentences from paragraph 7.

Bannister said, “I felt that the moment of a lifetime had come. There was no pain, only a great unity of movement and aim.”

The sentences contribute to the development of ideas in the passage by showing that Bannister

- E. knew that he was about to achieve the goal he had worked toward.
- F. was no longer experiencing personal disappointment from his past failure in the Olympics.
- G. felt grateful to his teammates for helping him take the lead.
- H. was satisfied that his training had helped him perfect his running technique.

- 37.** The phrase “a new mindset had taken root” in paragraph 8 conveys the idea that
- A.** runners recognized that running a mile in under four minutes was physically possible.
 - B.** breaking the four-minute-mile barrier was no longer considered an impressive feat for elite runners.
 - C.** runners understood how hard they would have to train in order to run a mile in under four minutes.
 - D.** elite runners entered races in an attempt to break the four-minute-mile barrier.
- 38.** Which sentence from the passage indicates that Bannister nearly made a mistake that would have cost him the world record?
- E.** “By early 1954, Bannister had succeeded in lowering his quarter-mile pace to sixty-one seconds, but he had to shave off at least one more second in order to reach his target.” (paragraph 4)
 - F.** “When the starting pistol fired, Brasher pounced into the lead, and Bannister followed behind his first rabbit.” (paragraph 6)
 - G.** “Propelled by the excitement, Bannister lost his instinctive feel for his pace and shouted ‘Faster!’ at Brasher.” (paragraph 7)
 - H.** “At the beginning of the back straightaway of the track, Bannister bolted past Chataway.” (paragraph 7)
- 39.** Bannister’s loss in the 1952 Olympics influenced his decision to pursue breaking the four-minute-mile barrier by
- A.** allowing him to recognize his weaknesses and improve his running ability.
 - B.** prompting him to take a different approach to his regular training.
 - C.** motivating him to prove to himself that he could set and achieve a goal.
 - D.** giving him the opportunity to reach a goal no runner had ever accomplished.

- 40.** How did interval training affect Bannister's performance?
- E.** It helped him learn how to moderate his pace while running.
 - F.** It helped him conserve effort when running with teammates.
 - G.** It helped him improve his pace and stamina while running.
 - H.** It helped him decrease his recovery time after an intense run.
- 41.** How does the author's use of chronological structure contribute to the development of ideas in the passage?
- A.** It presents the increasing physical effects of Bannister's training methods as he prepared to break the four-minute-mile barrier.
 - B.** It shows the increase in Bannister's confidence in his ability to break the four-minute-mile barrier.
 - C.** It emphasizes the key events in Bannister's life that inspired him to break the four-minute-mile barrier.
 - D.** It highlights the progression of Bannister's training and details about his successful attempt to break the four-minute-mile barrier.

The Great Serpent Mound, located in Adams County, Ohio, is a human-made mound of earth that researchers believe was created between 300 B.C. and A.D. 1100 by an indigenous culture.

Serpent Mound

Ohio, 1846

Brush Creek stood low when the museum men came
with their measuring tapes and sketchbooks.

It was winter. Fringed with ice,
the creek doubled back on itself
as if it had forgotten something.

Pa was in Cincinnati, or else on his way home,
so Ma told me to lead the men
into the marshy low grounds. It being winter,
there was little underbrush to speak of—
in the summer there would have been
briars, poison ivy, biting flies. I listened
for the *swish* of a beaver's heavy tail,
the chitter of a chickadee, or the cry of a hawk,
but the winter silence of the creek pressed
down on all of us like a weight.

The humps in the ground were all but
invisible until you were right up on them. The figure
was even less obvious: the sinuous body,
the tail coiled three times around,
and at the other end, the mouth wide open.
In the summer the creek bottom was crowded
with so much life that you could trip over
the ridges of earth before you saw
anything at all. In winter you could climb
a tree and get some idea of the whole thing:
the serpent's body undulating, slithering
silently across the ancient
earth. At the mouth end, there was an oval mound
as if the snake were about to swallow an egg—

as snakes sometimes did in our rickety
henhouse—my Pa always said, or
as if swallowing the sun, one of the museum
men suggested, taking notes with his quill pen,
an old-style inkhorn slung at his side.
I liked that: swallowing the sun,
just the sort of thing a snake might do,
might want to do. When, later, I told my sister Ruth,
she disagreed. It is singing to the sun,
she insisted. That is why its mouth
is wide open. She said, "Sometimes I think
I hear it on summer nights. Not swallowing, singing."

42. How does the poem's form contribute to the poem's meaning?
- E. The use of one continuous stanza and the pattern of the lines mimic the long and winding shape of the mound.
 - F. The uneven line lengths emphasize the variety of ways people interpret the meaning of the mound.
 - G. The dashes throughout the poem highlight the speaker's changing thoughts about the significance of the mound.
 - H. The lack of a regular rhyme scheme and meter convey that the speaker struggles to comprehend the vastness of the mound.
43. Which lines reveal how the setting affects the speaker and the men from the museum?
- A. "It being winter, / there was little underbrush to speak of—" (lines 8–9)
 - B. "but the winter silence of the creek pressed / down on all of us like a weight." (lines 14–15)
 - C. "The humps in the ground were all but / invisible until you were right up on them." (lines 16–17)
 - D. "In the summer the creek bottom was crowded / with so much life that you could trip" (lines 21–22)
44. Lines 1–2 contribute to the development of ideas in the poem by
- E. suggesting that the men are too busy with their work to talk to the speaker.
 - F. helping establish the reason for the men's visit and purposeful behavior.
 - G. hinting that the men have hidden motives for studying the mound.
 - H. indicating why the speaker is fascinated by the men and wants to help them.
45. Read line 28 from the poem.

At the mouth end, there was an oval mound

How does the line contribute to the development of ideas in the poem?

- A. It describes a feature of the mound that the men from the museum need to document.
- B. It introduces a comparison of the body of the mound with the head of the mound.
- C. It introduces a feature of the mound that has a different meaning to different people.
- D. It describes a part of the mound that is difficult to see from far away.

- 46.** What impact do the phrases “all but / invisible” and “even less obvious” in lines 16–18 have on the meaning of the poem?
- E.** They indicate that viewing the full size and shape of the mound is difficult.
 - F.** They suggest that the location of the mound is unknown to most people.
 - G.** They imply that the speaker wants the location of the mound to remain a secret.
 - H.** They reveal that the speaker is unfamiliar with the significance of the mound.
- 47.** What impact do the words “swish,” “chitter,” and “cry” in lines 12–13 have in the poem?
- A.** They illustrate how lively the mound’s surroundings are during the summer.
 - B.** They show how the mound disrupts natural life in the marsh.
 - C.** They indicate the variety of wildlife found in the area around the mound.
 - D.** They suggest that the speaker prefers the mound’s appearance in winter.
- 48.** How does the speaker’s interaction with Ruth in lines 37–41 convey a central idea of the poem?
- E.** It suggests that the most accurate interpretations of the mound come from knowing the purpose of the mound.
 - F.** It emphasizes that there are multiple interpretations of the mound based on feelings and experiences.
 - G.** It reveals the benefit of considering different interpretations of the mound’s significance.
 - H.** It implies that scientific study of the mound’s purpose will affect what the mound symbolizes to people.
- 49.** The poet contrasts the speaker’s and Ruth’s points of view regarding the mound by using dialogue to
- A.** imply that Ruth is worried that her interpretation of the mound will be seen as too abstract.
 - B.** indicate that Ruth hopes her interpretation of the mound will be shared by the men from the museum.
 - C.** suggest that Ruth wants the speaker to agree with her interpretation of the mound.
 - D.** show that Ruth has already decided on her interpretation of the mound.

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A Memory Revolution

- 1 A high school senior logs on to a computer at the library to double-check the application due date listed on a college admissions website. Nearby, a librarian helps a group of biology students use a database to search for recent studies about mammals. In the past few decades, the Internet has become an integral component of daily life for many people. The seemingly limitless power of search engines made the Internet search extremely common, and today people increasingly rely on the Internet's vast accumulation of sources to access all types of information. Scientists are beginning to examine how this reliance is modifying the strategies people use to store and prioritize information in their mind.

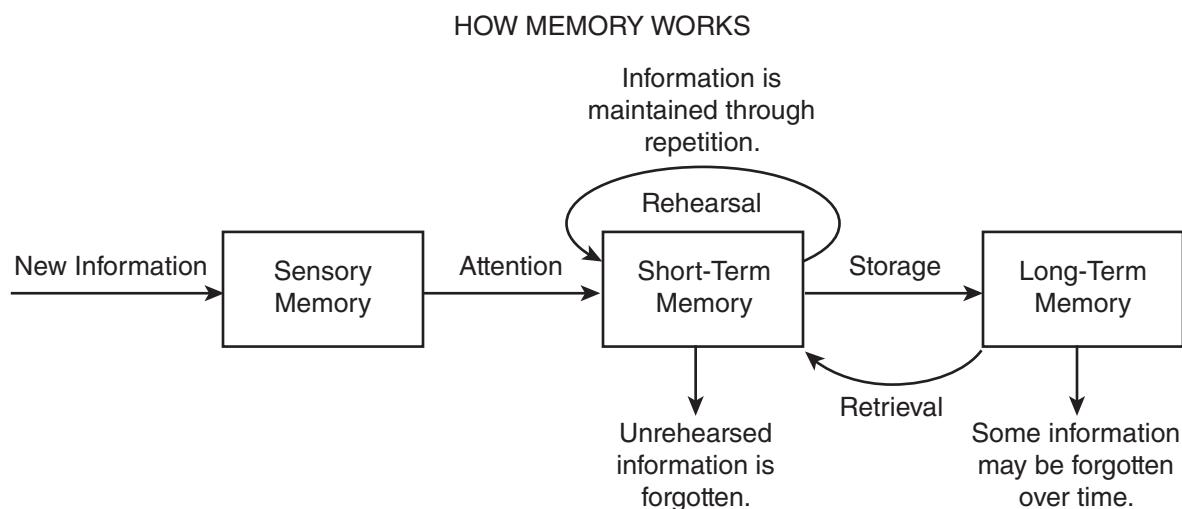
A Dependable and Valuable Asset

- 2 Psychologist Benjamin Storm from the University of California, Santa Cruz, and researchers Sean Stone and Aaron Benjamin devised an experiment to study students' tendency to depend on the Internet for facts. To begin, the scientists divided sixty participants into multiple groups, including an "Internet" group and a "memory" group, and placed them in front of computers. The Internet group was required to use the search engine Google to answer eight challenging trivia questions. In contrast, participants in the memory group were permitted to use only their personal knowledge to answer the questions. In the second round, the researchers administered notably easier questions. This time, they allowed each group the option of using Google as they answered. Their results showed that 83 percent of the Internet group continued to consult Google in the second round, while only 63 percent of the memory group chose to do so.
- 3 People's growing inclination to rely on the Internet in order to retrieve information, particularly facts and figures, is called cognitive offloading. Canadian researcher Evan F. Risko and British researcher Sam Gilbert, who have written extensively about the topic, say a similar process has been taking place for centuries. In the past, people used resources like encyclopedias to assist their memories; however, today the Internet, serving as a vast extended memory, allows people to digitally access and retrieve much larger volumes of information. Consequently, people's minds are free for other cognitive feats, such as connecting data, learning new information, or solving problems.

Filing Information Away

- 4 The use of the Internet also appears to be modifying the strategies people use to store information in their mind. Researchers Betsy Sparrow from Columbia University, Jenny Liu from the University of Wisconsin-Madison, and Daniel Wegner from Harvard University conducted several studies to discover how people efficiently manage their information intake.
- 5 To begin, the researchers examined how people evaluate which information deserves their effort to remember. For this experiment, participants read forty trivia facts, such as "An ostrich's eye is bigger than its brain," and typed the statements into a computer file. Half the participants had been previously told the file would be saved, while half believed it would be erased. Next, the participants wrote down every fact they could recall. Those who believed the information would be erased and no longer available could recall 40 percent more facts than those who thought the information would be saved.

- 6 In another experiment, the same researchers tested the ability of study participants to remember where to access information. For this trial, participants read and typed trivia statements, which they saved in folders with generic names such as "Facts" and "Items." After spending ten minutes writing down all the facts they could recall from memory, participants were asked which folder contained a particular fact based on a keyword. For example, "Which folder has the fact about ostriches?" Overall, participants recalled the information's location more often than the content itself, correctly identifying 49 percent of the folders for specific facts while remembering only 23 percent of the actual trivia. The researchers concluded that our memory is adapting to the Internet age by prioritizing where to locate information even when the specific details are forgotten. According to Sparrow, the Internet has become an important form of transactive memory, an external source of the recollections and associative networks that constitute memory.
- 7 As the Internet's resources continue to expand our "external" memory, some question whether the process may cause people to depend too heavily on technology. However, Steven Pinker, a professor of psychology at Harvard University, says, "Knowledge is increasing exponentially; human brainpower and waking hours are not. Fortunately, the Internet and information technologies are helping us manage, search and retrieve our collective intellectual output at different scales, from Twitter and previews to e-books and online encyclopedias. Far from making us stupid, these technologies are the only things that will keep us smart."



- 50.** The details in paragraph 3 about cognitive offloading convey a central idea of the passage by
- E.** suggesting that reliance on the Internet for information is inevitable.
 - F.** demonstrating how the methods used to store and find information have changed over time.
 - G.** explaining how encyclopedias and the Internet are similar sources of information.
 - H.** implying that more information can be understood now than ever before.

51. How do the details about the experiment described in paragraph 5 convey a central idea of the passage?
- A. They suggest that the act of repeating information by typing it on a keyboard may improve a person's memory.
 - B. They explain that a person will forget information faster if the information is considered unimportant.
 - C. They indicate that a person may start to forget details when the amount of information becomes overwhelming.
 - D. They suggest that memory is affected by whether a person expects to have access to the information in the future.

52. Read this sentence from paragraph 7.

As the Internet's resources continue to expand our "external" memory, some question whether the process may cause people to depend too heavily on technology.

How does the sentence contribute to the structure and development of ideas in the passage?

- E. It presents a claim about the risks of relying on the Internet that prompted the research described in paragraphs 2 and 6.
 - F. It contrasts a disadvantage of relying on the Internet with the benefits of Internet use that are described in paragraphs 2 and 6.
 - G. It signals a shift from a neutral viewpoint in paragraphs 2 and 6 to a presentation of an argument and a counterargument.
 - H. It introduces a counterargument and marks a transition from an optimistic tone in paragraphs 2 and 6 to a cautious tone as the counterargument is developed.
53. The study described in paragraph 6 influenced researchers' ideas about memory in the digital age by
- A. highlighting instances when organizing detailed information made it easier to remember.
 - B. confirming that keywords can be remembered more easily than large amounts of information.
 - C. identifying a shift in focus from remembering specific information to knowing where to find it.
 - D. emphasizing that remembering a basic idea is more important than storing detailed information.

- 54.** How does the diagram provide additional support for the topic presented in the passage?
- E.** It reveals why human brains must adapt to obtaining information from the Internet as opposed to other sources.
 - F.** It indicates how people can use the Internet to help improve their long-term recollection of information.
 - G.** It shows how study participants' brains distinguished between important and unimportant details.
 - H.** It depicts the idea that repetition and rehearsal are necessary to recall information when tools such as search engines are unavailable.
- 55.** Which evidence from the passage is most relevant to the claim in paragraph 7 that " 'far from making us stupid, these technologies are the only things that will keep us smart' "?
- A.** the revelation that most people opted to use the Internet to answer relatively easy trivia questions rather than relying on their own brainpower (paragraph 2)
 - B.** the assertion that the storage of information on the Internet frees people to focus on higher-order tasks such as problem solving (paragraph 3)
 - C.** the connection between how people organize information in their mind and their ability to recall that information (paragraph 5)
 - D.** the description of transactive memory as an expansive external source that people can use to store information (paragraph 6)

- 56.** Which sentence from the passage suggests that using Internet search engines may lead people to rely less on their own ability to recall information?
- E.** "In the past few decades, the Internet has become an integral component of daily life for many people." (paragraph 1)
 - F.** "The Internet group was required to use the search engine Google to answer eight challenging trivia questions." (paragraph 2)
 - G.** "Their results showed that 83 percent of the Internet group continued to consult Google in the second round, while only 63 percent of the memory group chose to do so." (paragraph 2)
 - H.** "For this experiment, participants read forty trivia facts, such as 'An ostrich's eye is bigger than its brain,' and typed the statements into a computer file." (paragraph 5)
- 57.** The effect of the Internet on a person's memory is illustrated in the passage through the presentation of studies that
- A.** examine how the use of search engines changes the way people evaluate and store information for future access.
 - B.** highlight the difference between the capacity of the Internet and the ability of the human brain to locate information.
 - C.** compare the type of information that can be obtained from the Internet with the type of information that is stored in the human brain.
 - D.** emphasize the ease of obtaining information through search engines rather than remembering it without assistance.

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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.

GRID-IN QUESTION NOTES

- (1) For each grid-in question, write your answer at the top of the grid.
- (2) Begin recording your answer in the columns on the far left.
- (3) Fill in the circle under the box that matches the number or symbol you wrote. Leave the negative sign bubble blank if your answer is positive.

(Answer: -1.5)

(Answer: 3.2)

CONTINUE TO THE NEXT PAGE ►

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. 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?

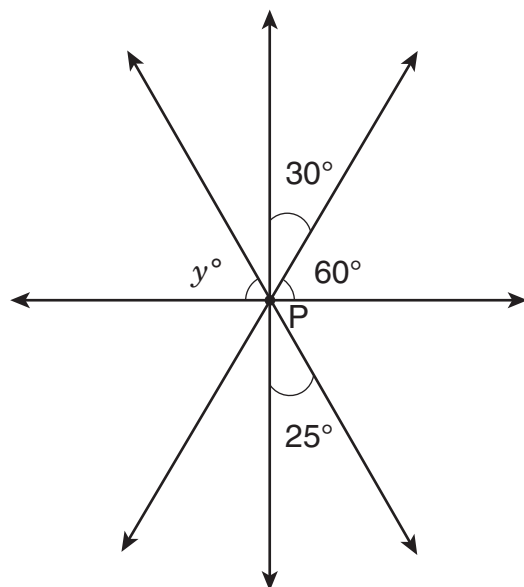
60. $|(-6) - (-5) + 4.2| - |3 - 9.6| =$

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

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

- 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 ?

MULTIPLE CHOICE QUESTIONS

QUESTIONS 63–114

DIRECTIONS: Solve each problem. Select the best answer from the choices given. Mark the letter of your 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. If $x = 9$ and $y = -7$, what is the value of $x(x - 2y)$?

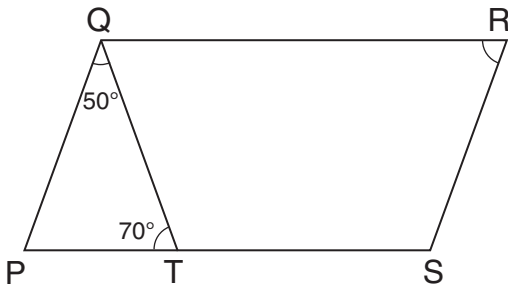
A. 18
B. 45
C. 144
D. 207

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

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°

66.

DESSERT CHOICES

Dessert	Number of Times Ordered
Cookies	42
Pie	23
Cake	47
Ice Cream	48

The table above shows the number of times that different desserts were ordered at a restaurant. Based on this information, what is the probability of a customer ordering ice cream as a dessert?

- E. 25%
- F. 30%
- G. 40%
- H. 48%

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

68. At 1:00 p.m. one day, the temperature was 8 degrees above zero. During the rest of the day, the temperature fell 3 degrees per hour. What was the temperature at 7:00 p.m. that day?

- E. -13°
- F. -10°
- G. -7°
- H. 5°

69. A bag contains 75 marbles that are red, blue, or green. The ratio of red to blue marbles is 15:7, and the ratio of blue to green marbles is 7:3. If 2 blue marbles are removed and replaced with 2 green marbles, what will be the new ratio of red to green marbles?

- A. 3:1
- B. 5:1
- C. 15:3
- D. 45:11

70. 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

71. What is the least common multiple of 24, 6, and 18?

- A.** 36
- B.** 48
- C.** 72
- D.** 144

72. One day, the Early Bird Restaurant used 15 dozen eggs for 200 breakfast customers. At this rate, approximately how many dozen eggs are needed for 300 breakfast customers?

- E.** 20
- F.** 23
- G.** 25
- H.** 30

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.** $\frac{1}{9}$
- B.** $\frac{5}{14}$
- C.** $\frac{9}{14}$
- D.** $\frac{2}{3}$

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
$\frac{1}{4}$ page	\$ 200
$\frac{1}{2}$ page	\$ 350
full page	\$ 600

The table above shows prices for newspaper advertising. A store purchased $\frac{1}{4}$ pages, $\frac{1}{2}$ 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. $1\frac{3}{4}$ pages
- B. 10 pages
- C. $16\frac{1}{2}$ pages
- D. $17\frac{1}{2}$ pages

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

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

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

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

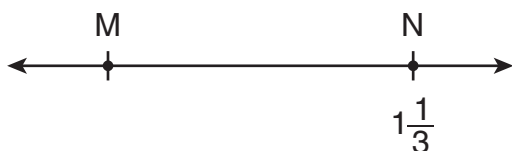
78. Points X , Y , and Z are on a straight line, and Y is between X and Z . Length $\overline{YZ} = \frac{3}{5}\overline{XY}$, and length $\overline{XY} = 20$ centimeters. What is the length of \overline{XZ} ?

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

79. Bryana bought $1\frac{3}{4}$ 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, $MN = 5\frac{5}{6}$.
What is the position of point M?

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

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

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. $28 - 12x$

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. $\frac{7}{40}$
- B. $\frac{1}{12}$
- C. $\frac{1}{8}$
- D. $\frac{3}{10}$

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

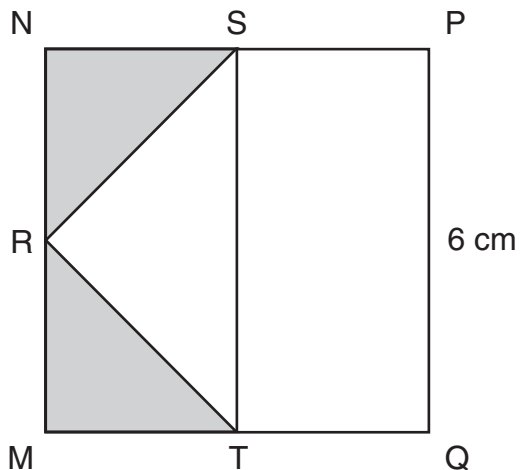
91.

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

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

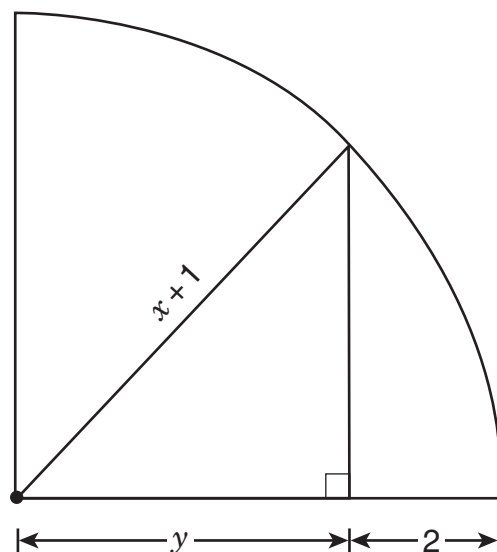
98. Points P, Q, R, and S represent -3 , -1 , 0 , and 2 , respectively, on a number line. How many units is the midpoint of \overline{PQ} from the midpoint of \overline{RS} ?

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

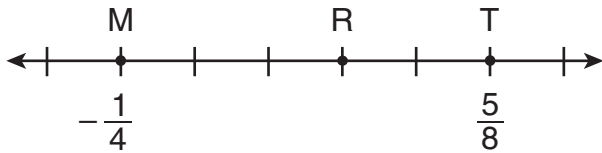
100.



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

E. $x - 1$
F. $x + 1$
G. $\frac{x+1}{2}$
H. $\sqrt{\frac{(x+1)^2}{2}}$

101.



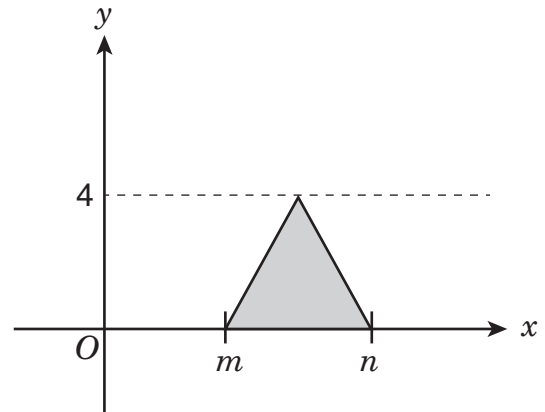
The hash marks on the number line above are evenly spaced. What is the coordinate of point R?

- A. $\frac{7}{40}$
- B. $\frac{9}{40}$
- C. $\frac{11}{40}$
- D. $\frac{21}{40}$

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.



What is the area of the shaded triangle shown above?

- A. $m + n$
- B. $n - m$
- C. $2(n - m)$
- D. $4(n - m)$

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

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

- 105.** 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. $\frac{3}{5}$
 B. $\frac{16}{25}$
 C. $\frac{19}{25}$
 D. $\frac{4}{5}$

106.

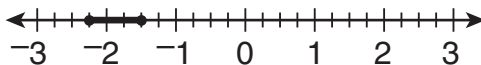
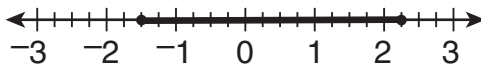
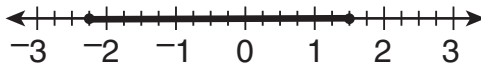
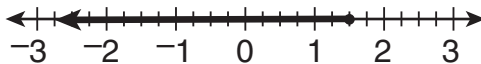
ANIMAL CARDS

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. $\frac{2}{3}$

F. 3

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

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. $\frac{1}{6}$

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

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

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

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

111. Raoul is at least 3 years older than Vahn.
Which of the following inequalities gives
the relationship between Raoul's age (r)
and Vahn's age (v)?

- A.** $r - v \geq 3$
- B.** $r - v \leq 3$
- C.** $3 - v \leq r$
- D.** $3 - r \leq v$

113. There are now x cans stacked on a shelf
that holds 36 cans when full. If 4 of these
cans were removed, the shelf would be
half full. What is the value of x ?

- A.** 14
- B.** 16
- C.** 18
- D.** 22

112. 1 sind = 5.6 ricks

1 sind = 12.88 dalts

Using the conversion above, how many
dalts are equal to 1 rick?

- E.** 0.43
- F.** 2.30
- G.** 7.28
- H.** 18.48

114. Carlos tossed a paper cup in the air 50
times and found that the probability of it
landing on its side was 72%. If he tosses
the cup in the air 150 **more** times, what is
the total number of times he can expect
the cup to land on its side?

- E.** 72
- F.** 108
- G.** 144
- H.** 158

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

REVISING/EDITING PART A

1. The question asks for the best way to combine the sentences to clarify the relationship between the ideas.
 - A. Incorrect. Even though the two ideas from the original sentences are incorporated into the combined sentence, the use of the conjunction “while” in the first part of the sentence suggests that there is a simultaneous but unrelated relationship between the two ideas, which is incorrect.
 - B. Incorrect. The combined sentence incorporates the ideas from both sentences, but the conjunction “although” suggests that scientists were allowed to collect data even though there were flyby missions, which is an inaccurate way to express the relationship between the ideas.
 - C. **CORRECT.** This sentence is the best way to combine the sentences because it accurately reflects the relationship between the ideas by using the nonrestrictive clause “which allow scientists to collect data about the planet and its moons” to describe the purpose of the flyby missions. (Nonrestrictive clauses are adjective clauses that give additional information about a word or phrase. They sometimes begin with the relative pronoun “which” and are set off by commas.) The idea that the missions “have been happening since 1973” follows the nonrestrictive clause.
 - D. Incorrect. The combined sentence uses the conjunction “but” to connect the ideas in the two original sentences. This suggests an adverse relationship between ideas, which is an inaccurate way to connect the ideas expressed in the original sentences.

2. The question asks for the identification of the sentence that has an error in its construction and should be revised.
- E. Incorrect. There are no errors in the structure of sentence 1. The clause “who played in the Long Island area at the time” correctly modifies the noun “New York Nets.” “Who” is the correct relative pronoun to serve as the subject of the modifying clause because it refers to people rather than objects or things.
 - F. **CORRECT.** Sentence 2 contains a structural error. The current placement of the clause “where the Nets played for thirty-five seasons” suggests the clause is modifying the term “financial troubles,” which is illogical. The clause “where the Nets played for thirty-five seasons” should immediately follow the location, “New Jersey.” A revised version of the sentence might read, “After the team had financial troubles, the owner of the Nets decided to take the team to New Jersey, where the Nets played for thirty-five seasons.”
 - G. Incorrect. There are no errors in the structure of sentence 3. The phrase “including two appearances in the NBA finals” is a nonrestrictive phrase that provides further detail about the team’s “sixteen playoff appearances.” The phrase is set off by a comma because it is not essential to understanding the meaning of the sentence.
 - H. Incorrect. There are no errors in the structure of sentence 4. The clause “where the team now plays under the name the Brooklyn Nets” is a nonrestrictive clause that provides further detail about the team after its move back to New York in 2012. The phrase is set off by a comma because it is not essential to understanding the meaning of the sentence.
-
3. The question asks how the paragraph should be revised.
- A. Incorrect. The revisions in this option introduce new errors. The word “spent” is correct in the past tense because that is the tense used throughout the rest of the paragraph. Additionally, adding a comma after the word “play” would be incorrect because it would separate the prepositional phrase “at the community theater” from the rest of the sentence.
 - B. Incorrect. The revisions in this option introduce new errors. The word “did” is correct as written in the past tense because the past tense is used throughout the paragraph. There is no comma needed after the word “projection” because “so” is not functioning as a conjunction but rather as part of the conjunction phrase “so that,” which does not take a comma.
 - C. **CORRECT.** Changing the word “studies” from the present tense to the past tense “studied” is necessary to match the past tense established in the paragraph (“spent,” “recited”). Additionally, the comma after the word “emotions” needs to be removed because the words “emotions and motivations” are part of a group (series) of two elements, and when there are only two elements in a series, a comma is not used.
 - D. Incorrect. The revisions in this option introduce new errors. The word “recited” is correct as written in the past tense because the past tense is used throughout the paragraph. Also, removing the comma after “times” is incorrect because the comma is needed in order to separate the modifying phrase “making slight adjustments and improvements to her performance each time” from the main clause.

4. The question asks for the revisions that are needed to correct errors in the paragraph.
- E. Incorrect. The revisions introduce new errors. The colon after “wonder” is needed to set off the question “what is the difference between the two?” from the rest of the sentence. In addition, changing the verb “is” to “are” would be incorrect with the use of the singular noun “difference,” which is the subject in the question.
 - F. Incorrect. The revisions introduce new errors. The comma following the introductory phrase “To start with” helps with clarity and is needed to separate the phrase from the rest of the sentence. Changing “it is” to “they are” would be incorrect with the use of the singular noun “butterfat content,” which is what the words “it is” refer to in the sentence.
 - G. Incorrect. The revisions introduce new errors. The comma following “process” is necessary to set off the nonrestrictive clause “which adds less air to the frozen treat” from the rest of the sentence. This clause is considered a nonrestrictive clause because it provides additional, but not essential, information about the mixing process. Changing the verb “makes” to “make” would be incorrect with the use of the singular noun “mixing process,” which is the subject of the sentence.
 - H. **CORRECT.** Deleting the comma after “gelato” would include the clause “and allow it to melt more quickly” with the first part of the clause “which enhances the texture and flavor of the gelato.” The word “and” between the two verb phrases (“enhances the texture and flavor of the gelato” and “allow it to melt more quickly”) indicates that the two verb phrases share a subject, “which” (referring to the act of serving gelato 10 to 15 degrees warmer than ice cream). The two ideas should not be separated by a comma within the clause. The entire clause “which enhances the texture and flavor of the gelato and allow it to melt more quickly” should be separated from the main clause only by the comma after “cream” because the entire clause is a nonrestrictive clause. This clause provides additional, but not essential, information about the purpose of serving gelato at a warmer temperature than when serving ice cream. Changing the verb “allow” to “allows” is also necessary to match the use of the singular noun “gelato,” which is the subject of the sentence.

REVISING/EDITING PART B

Martial Arts for the Mind and Body

5. The question asks for the best way to combine sentences 2 and 3.
- A. Incorrect. This way of combining sentences 2 and 3 places unnecessary emphasis on characterizing historians, and it does not clearly show the contrasting relationship between the idea from sentence 2 that historians do not know the exact origins of martial arts and the idea in sentence 3 that historians know that martial arts have a long history.
 - B. **CORRECT.** This option is correct because the word “while” at the beginning of the sentence best indicates the contrast between the ideas in sentences 2 and 3. Sentence 2 states that historians do not know the exact origins of martial arts (“unsure of exactly when and where”). Sentence 3 describes what historians do know about these origins (“practiced by several different societies for many centuries”). This combination indicates that historians have a general understanding about the origins of martial arts even though they cannot confirm the exact details.
 - C. Incorrect. Starting this sentence with the word “because” indicates a cause-and-effect relationship that does not exist between the ideas in the original sentences. The idea from sentence 3, that historians know that martial arts have been practiced for many years, did not cause the idea in sentence 2, that historians do not know exact details about the origins of martial arts.
 - D. Incorrect. The conjunction (connecting word) “and” does not clearly show how the ideas in sentences 2 and 3 are related. While “and” can be used to combine related sentences, it does not demonstrate the contrast between the idea in sentence 2, that historians do not know the exact origins of martial arts, and the idea in sentence 3, that historians know that martial arts have a long history.

6. The question asks where sentence 10 should be moved to improve the organization of the second paragraph.
- E. Incorrect. Starting this paragraph with sentence 10 would weaken the paragraph's organization because it would place a supporting detail sentence (sentence 10) before the topic sentence (sentence 6). Sentence 6 belongs at the beginning of the paragraph because it introduces the topic—the qualities of discipline, focus, and respect. Sentence 10 supports the key idea of the paragraph, that these qualities can be developed through the study of martial arts. If sentence 10 preceded sentence 6, the transitional phrase “for example” would refer to an unspecified topic and idea.
 - F. Incorrect. Sentence 6 presents the idea that “discipline, focus, and respect are important qualities for everyone to have,” but the example in sentence 10 does not directly relate to this idea. Sentence 10 explains how martial arts develop these qualities, not why they are important qualities to have. Because sentence 10 is not directly related to the idea in sentence 6 (the qualities are important), it should not follow sentence 6.
 - G. Incorrect. Sentences 7 and 8 should not be separated, because the idea presented in sentence 8—that “the study of martial arts can provide an opportunity to develop these skills”—is directly related to the idea from sentence 7—that the skills of discipline, focus, and respect “are not innate; they must be learned and practiced.” Sentence 10 supports the idea from sentence 8 by describing an example from a typical martial arts class, so sentence 10 should not precede sentence 8.
 - H. **CORRECT.** This option is correct because sentence 10 logically follows and supports the idea in sentence 8 that “the study of martial arts can provide an opportunity to develop” the qualities of discipline, focus, and respect. Sentence 10 explains this idea with examples, describing three specific ways that students in a typical tae kwon do class develop discipline, focus, and respect—by “diligently practicing,” “listening carefully,” and “bowing to the instructor and following directions.”
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7. The question asks for the revision of sentence 12 that best maintains the formal style established in the passage.
- A. Incorrect. The phrases “A lot,” “put up with,” “difficult things,” and “do well in school” are worded informally; therefore, this sentence does not consistently maintain the formal style established in the passage.
 - B. Incorrect. The phrases “deal with,” “tough situations,” “stay on top of,” and “do well in life” are worded informally; therefore, this sentence does not consistently maintain the formal style established in the passage.
 - C. **CORRECT.** This option is correct because it uses clear and scholarly wording throughout the whole sentence. The phrases “many teenagers,” “encounter challenges,” and “succeed both academically and personally” make the sentence's style more consistently formal than the other options.
 - D. Incorrect. The phrases “A lot,” “face problems,” and “keep up with” are worded informally; therefore, this sentence does not consistently maintain the formal style established in the passage.

8. The question asks for the transitional phrase that should be added to the beginning of sentence 17.

- E. **CORRECT.** This option is correct because it best shows the chronological progression between the ideas in sentence 16—progressing through levels of achievement “requires students to take responsibility and be accountable for achieving set goals”—and the ideas in sentence 17—“students gain confidence and experience companionship with other students who are progressing through the ranks.” The transitional phrase “over time” shows the gradual nature of the relationship between the cause in sentence 16 and the effect in sentence 17.
 - F. Incorrect. Though the ideas in sentences 16 and 17 are related, “in fact” does not show the correct relationship between the ideas. The transitional phrase “in fact” emphasizes an idea by giving a detail or example of greater intensity, but the ideas in sentence 16—progressing through levels “requires students to take responsibility and be accountable for achieving set goals”—and the ideas in sentence 17—“students gain confidence and experience companionship with other students who are progressing through the ranks”—are related by cause and effect rather than by (degree of) intensity.
 - G. Incorrect. The transitional phrase “even so” is used to connect opposing ideas, but the ideas in sentence 16—progressing through levels “requires students to take responsibility and be accountable for achieving set goals”—does not contrast with the ideas in sentence 17—“students gain confidence and experience companionship with other students who are progressing through the ranks.”
 - H. Incorrect. Although the transitional phrase “for instance” connects an idea with a related example, it does not show the cause-and-effect relationship between the ideas in sentence 16—progressing through levels “requires students to take responsibility and be accountable for achieving set goals”—and the ideas in sentence 17—“students gain confidence and experience companionship with other students who are progressing through the ranks.”
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9. The question asks for the sentence that would best follow and support sentence 18.

- A. Incorrect. Though the idea of advancing one’s career is certainly appealing for adults, this benefit is not directly tied to “health and fitness” and, therefore, does not support sentence 18.
- B. Incorrect. While the passage does discuss potential benefits related to discipline, focus, and confidence (sentences 6 and 11), sentence 18 is solely related to health and fitness benefits and should not be followed by a description of “other skills.”
- C. **CORRECT.** This option is correct because sentence 18 conveys that the greatest benefit of practicing martial arts is “health and fitness,” and the sentence illustrates some specific ways that martial arts training helps improve physical fitness—“strengthen their heart, boost endurance, improve balance, and develop muscle tone.”
- D. Incorrect. Some readers may choose this option because sentence 5, sentence 15, and sentence 18 discuss the physical aspects of practicing martial arts, but the idea that people who practice martial arts are concerned about their overall health does not provide further details about the connection between training and health.

- 10.** The question asks for the concluding sentence that best replaces sentence 23 and supports the topic presented in the passage.
- E.** Incorrect. The phrase “the skills needed to progress in rank” is vague, and progressing in rank is not related to the overall topic of the passage, which is the benefits of studying martial arts. The topic of the passage is not the “many ways to begin studying martial arts” or how “people can easily discover” the benefits of martial arts.
 - F. CORRECT.** This option is correct because it best supports the topic of the passage—the benefits of studying martial arts—by stating two reasons why people should study martial arts: to “experience the satisfaction of achieving goals while also improving themselves.”
 - G.** Incorrect. Some readers may choose this option because it refers to the benefits of martial arts, but the word “because” and the detail that “enrollment in martial arts courses has increased” make this sentence unrelated to the overall topic of the passage, which is about the benefits of studying martial arts, not the number of people who participate.
 - H.** Incorrect. Although the benefits of studying martial arts are described for both teens (in the third paragraph) and adults (in the fourth paragraph), the topic of the passage is the overall benefits of studying martial arts, which include mental discipline (discussed in the first, second, and third paragraphs) in addition to health benefits. Furthermore, the passage does not compare the health effects of studying martial arts across age groups.

READING COMPREHENSION

Wolves of the Sea

- 11.** The question asks how the details about Darimont in paragraph 1 contribute to a central idea of the passage.
- A.** Incorrect. Although paragraph 1 includes the detail that the Great Bear Rainforest is a protected area, finding an ideal location to study wolves is not a central idea of the passage. Additionally, the paragraph does not describe Darimont's beliefs about the Great Bear Rainforest.
 - B. CORRECT.** Paragraph 1 explains why Darimont wanted to consult with Chester Starr, an elder of the Heiltsuk Nation: "When biologist Chris Darimont began to study these wolves, he wanted to confer with local First Nations groups, as aboriginal Canadians are known, in order to learn what they knew about these wolves." The details in paragraph 1 show that Darimont valued Starr's perspective ("What Starr had to say about the wolves changed Darimont's perception of the animals"), even though it was different from Darimont's own perspective at that time.
 - C.** Incorrect. Paragraphs 1 and 2 show that Darimont did not initially believe that the mainland wolves and the coastal wolves were different groups. Therefore, the details in paragraph 1 do not provide evidence that Darimont chose Great Bear Rainforest because of an expectation that there were separate groups of island wolves and timber wolves. Instead, he chose the Great Bear Rainforest for the opportunity to study what he had presumed to be one group of wolves.
 - D.** Incorrect. Although Darimont sought out Chester Starr, an elder of the Heiltsuk Nation, before beginning his research, Darimont's purpose in doing so was not to request Starr's permission to study the wolves but to learn from Starr's expert knowledge of the area and its wolves ("When biologist Chris Darimont began to study these wolves, he wanted to confer with local First Nations groups, as aboriginal Canadians are known, in order to learn what they knew about these wolves" [paragraph 1]).

12. The question asks why the author includes details about the conversation between Starr and Darimont in paragraph 2.

- E.** Incorrect. The details in paragraph 2 do not explain why Starr had closely observed the two groups of wolves. Instead, they convey that Starr believed the wolves to be separate groups ("Starr asked Darimont which wolves he and his team were going to study—the timber wolves (mainland wolves) or the coastal wolves on the islands"), a supposition that intrigued Darimont and ultimately changed the course of his research study.
- F.** Incorrect. Although paragraph 1 indicates that Darimont did hope to work with Starr ("he wanted to confer with local First Nations groups, as aboriginal Canadians are known, in order to learn what they knew about these wolves"), Darimont did not initially plan to study both groups of wolves in the area because, as the conversation in paragraph 2 indicates, he did not initially know they were two distinct groups of wolves.
- G.** Incorrect. The details about the conversation in paragraph 2 highlight that Darimont was eager to learn from Starr's knowledge of the wolves ("Darimont was intrigued by Starr's classification of the wolves as two different groups"), but they do not indicate that Darimont expected Starr's help to find the wolves.
- H. CORRECT.** According to paragraph 2, Starr wanted to know which group of wolves Darimont planned to study—"the timber wolves (mainland wolves) or the coastal wolves on the islands." The author states that the question "took Darimont by surprise," adding that "Darimont was intrigued by Starr's classification of the wolves as two different groups." The author adds that Darimont was initially "hesitant to accept the idea" that the wolves were separate groups but ultimately spent years studying the two groups of wolves. These details indicate that the question Starr posed to Darimont forced Darimont to reevaluate his initial assumption "that the wolves that are sometimes spotted swimming between islands and eating salmon are the same wolves that live on the mainland" and investigate Starr's observation that the wolves had separated into two distinct groups.

- 13.** The question asks what the phrase “hard biological evidence” in the sentence from paragraph 4 conveys about the goal of the research team.
- A.** Incorrect. Although the research team followed a labor-intensive procedure, the phrase “hard biological evidence” refers to the product of their scientific research (the genetic markers revealed within the DNA samples), not the process by which they collected it. Their goal was not to develop a procedure for data collection but to determine precisely how many species of wolf were present in the area.
 - B. CORRECT.** The research team wanted to prove or disprove the theory that two separate groups of wolves were present in the area, an idea that was already supported by the observations of scientists and local indigenous people. The phrase “hard biological evidence” conveys that the scientists wanted to bolster their observations of the wolves with concrete scientific data about the wolves’ biological makeup. The goal of the researchers was to use the data to prove how many species of wolf were present in the area of the study.
 - C.** Incorrect. The research team gathered extensive data during their study (“After collecting and analyzing the DNA in 800 samples of gray fur and wolf waste” [paragraph 4]), and their goal in doing so was to evaluate a single theory about the wolves: that the wolves had evolved into two separate and genetically distinct species. The research team did not conduct the study in order to evaluate multiple theories about the diets of the wolves.
 - D.** Incorrect. The phrase “hard biological evidence” does not suggest that the research team was hoping to discover if the new data would provide information that was different from previous studies. In fact, the goal of the research team was to use the genetic data to supplement their initial sources of information about the wolves and their own observations from the field.

- 14.** The question asks for the most likely reason why the author uses the word “admits” in paragraph 5.
- E.** Incorrect. The word “admits” highlights the surprising difference between Darimont’s initial idea and the conclusion he ultimately drew from the results of the study. Though Darimont’s genetic research did, in fact, verify the field observations of the wolves, this does not explain the author’s use of the word “admits” in paragraph 5.
 - F.** Incorrect. The conclusion that Darimont reached was actually quite original, since biologists widely believed the two separate groups of wolves to be one (“Biologists had always believed that the wolves that are sometimes spotted swimming between islands and eating salmon are the same wolves that live on the mainland,” [paragraph 2]). The author uses the word “admits” in paragraph 5 to emphasize how unexpected Darimont found the conclusion to be (“The distances between the mainland and the islands are small, less than a mile. Why would the wolves on the islands be any different from the wolves on the mainland?” [paragraph 2]), not to indicate that the study was a disappointment.
 - G. CORRECT.** The use of “admits” emphasizes that Darimont found the idea of two species of wolves “ ‘totally bizarre at first’ ” (paragraph 5) but ultimately proved it to be correct. Paragraph 2 suggests that Darimont, like other scientists, “had always believed that the wolves that are sometimes spotted swimming between islands and eating salmon are the same wolves that live on the mainland.” Therefore, the results of the study were likely to strike biologists as bizarre, and the use of the word “admits” in paragraph 5 highlights Darimont’s shift from doubt to confirmation.
 - H.** Incorrect. Darimont’s team conducted the research that helped him confirm Starr’s idea and draw the conclusion that the wolves were separate species (“After collecting and analyzing the DNA in 800 samples of gray fur and wolf waste, researchers could produce hard biological evidence that sea wolves had genetic markers that made them distinct from the mainland wolves” [paragraph 4]). However, the opinions of Darimont’s research team are not described in the passage, and the word “admits” does not indicate that they disagreed with his conclusion.

15. The question asks for the sentence from the passage that best supports the idea that sea wolves had successfully adapted to living on the islands.

- A. CORRECT.** This sentence from paragraph 3 describes a significant difference in the diets of the mainland and sea wolves: the mainland wolves “almost exclusively eat meat, such as deer and elk, and teach their young to hunt for land animals,” whereas the sea wolves had adapted to the point where they derive “as much as 90 percent of their nutrition from the sea and teach their young to dig for clams and to catch fish.” This sentence emphasizes the dietary difference between the two groups of wolves and best supports the idea that sea wolves had successfully adapted to living on the islands.
 - B.** Incorrect. Although this sentence from paragraph 3 describes one technique that the sea wolves used to hunt, it does not offer evidence as strong as that provided by the preceding sentence, which explains that sea wolves were able to derive “as much as 90 percent” (paragraph 3) of their sustenance from the sea alone (versus the mainland wolves, which “almost exclusively eat meat” from land animals [paragraph 3]).
 - C.** Incorrect. Although this sentence from paragraph 3 states that “some sea wolves live their entire life on the islands,” it does not provide strong evidence of the necessary adaptations—namely, how these wolves were able to successfully live their whole lives on the islands. Living on the islands was not necessarily an adaptation in and of itself; the adaptation was the sea-based diet that enabled the sea wolves to live on the islands without access to land animals.
 - D.** Incorrect. Although this sentence from paragraph 4 presents Darimont’s hypothesis that “a change in habitat led to the eventual genetic differences” between the wolves, the sentence does not describe any of the sea wolves’ adaptations nor best support the idea that the sea wolves successfully adapted to living on the islands.
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16. The question asks how a change in habitat most affected the wolf population of the Great Bear Rainforest over time.

- E.** Incorrect. Although the island wolves learned new hunting techniques (“dig for clams and to catch fish,” “sneak up on a seal sunning itself on a rock and make a leaping attack from the water” [paragraph 3]), there is no evidence in the passage that these hunting techniques were developed in response to scarcity of prey. The most significant effect of the change in habitat was not an influence on hunting techniques but the behavior differences that evolved because of the isolation of the groups of wolves from each other.
- F.** Incorrect. The change in habitat did not cause the wolves to form smaller packs but rather served to create distinctive behaviors because of the isolation of one pack from another, eventually causing the groups of wolves to become distinct species.
- G. CORRECT.** The change in habitat caused the wolves to gradually become two distinct species. Though the “sea wolves regularly swim between islands” and “some salmon-eating mainland wolves come and go from the islands,” the “sea wolves are full-time island residents” (paragraph 3). This behavioral adaptation to their environment caused the sea wolves to “became more isolated” from the mainland wolves; as a result, the two groups “rarely mated with each other,” and “over time the two types of wolves became more distinct” (paragraph 4).
- H.** Incorrect. Only the sea wolves adapted their diet. They did this not because different food sources became available in the area but because they were in an entirely different area from the mainland wolves.

Excerpt from "How We Made the First Flight"

- 17.** The question asks how paragraph 1 introduces the idea that the Wright brothers knew that their flight attempt was risky.
- A. CORRECT.** Paragraph 1 describes the Wright brothers hanging out "the signal" to notify the lifesaving crew to stand by as they attempted flight; the need for lifesaving experts to be available in case of an accident introduces the idea that the attempted flight might crash.
 - B.** Incorrect. The specifics on the speed of the wind by themselves do not emphasize the danger of the flight. While the brothers admitted that the strong wind posed certain risks, they also noted that the windy conditions might make landing safer ("estimated that the added dangers in flight would be partly compensated for by the slower speed in landing" [paragraph 1]).
 - C.** Incorrect. A slower landing was expected as a result of the windy conditions, but it was not part of a plan to increase the safety of the flight.
 - D.** Incorrect. While the Wright brothers' initial decision to wait to see whether the wind would die down does suggest they were concerned about the safety of the flight, the explanation of their decision to proceed with the flight shows that they expected one benefit from the poor weather: "the slower speed in landing" (paragraph 1).
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- 18.** The question asks how the sentence from paragraph 4 contributes to the development of ideas in the excerpt.
- E.** Incorrect. The sentence from paragraph 4 does not refer to the challenge of the winter conditions during the flight attempt.
 - F.** Incorrect. While the sentence from paragraph 4 specifically references a previous flight several days earlier, it does not state how many attempts came before Wilbur's attempt on December 14.
 - G. CORRECT.** The sentence from paragraph 4 indicates that the Wright brothers had agreed to take turns attempting to achieve the first flight, which suggests their eagerness to each be the first to successfully fly the machine.
 - H.** Incorrect. Orville's trial came about simply because the brothers took turns, which would suggest that there was no greater likelihood of success or reason to be more confident at that moment than there had been for previous attempts.

19. The question asks why the photograph mentioned in paragraph 4 is significant.

- A.** Incorrect. According to paragraph 4, the photograph was not taken immediately after the tethering wire was released but rather after an intervening period during which “Wilbur ran at the side of the machine, holding the wing to balance it on the track.” The picture was not taken until “the machine had reached the end of the track,” which occurred after a “forty-foot run” (paragraph 4).
 - B. CORRECT.** The photograph mentioned in paragraph 4 is significant because it provides proof that the machine did, in fact, take flight: “One of the Life Saving men snapped the camera for us, taking a picture just as the machine had reached the end of the track and had risen to a height of about two feet. The slow forward speed of the machine over the ground is clearly shown in the picture by Wilbur’s attitude. He stayed along beside the machine without any effort.”
 - C.** Incorrect. The photograph mentioned in paragraph 4 is described as showing the plane moving forward through the air at a height of two feet, but while the effect of the wind may be visible, it is not why the photo is significant. Instead, the photograph provides proof that the plane is, in fact, moving through the air (“One of the Life Saving men snapped the camera for us, taking a picture just as the machine had reached the end of the track and had risen to a height of about two feet. The slow forward speed of the machine over the ground is clearly shown in the picture by Wilbur’s attitude”).
 - D.** Incorrect. Although the plane is shown at a height of two feet in the photograph mentioned in paragraph 4, the picture documents only one moment of the plane’s flight and does not provide proof that the pilot had to gradually increase the height of the plane in the air.
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20. The question asks how the details in paragraph 5 about the uneven nature of the flight convey a central idea of the excerpt.

- E.** Incorrect. Paragraph 5 explains that the rudder was unbalanced and the effect that this issue had on the flight, but the rudder was only part of the reason for the short flight. The length of the flight is not a central idea of the excerpt.
- F.** Incorrect. Although paragraph 5 does explain that the equipment contributed to the difficulty of controlling the plane’s flight, the lack of control over the flight is not a central idea of the excerpt, which is the fact that the Wright brothers achieved a successful flight in spite of the challenges involved.
- G. CORRECT.** The details in paragraph 5 describe the difficulties that the weather conditions and mechanical issues presented and how Orville’s flight was successful despite the issues. The ability of the Wright brothers to overcome difficult circumstances and complete the first flight is a central idea of the excerpt.
- H.** Incorrect. While paragraph 5 does emphasize the difficulty caused by the wind, it does not describe a “gradual change” in the wind, only that it was “irregular.”

- 21.** The question asks how the sentence from paragraph 5 helps convey Orville Wright's perspective about the first flight.
- A.** Incorrect. Although the sentence from paragraph 5 refers to the velocity of the wind during the flight, there is no indication that Orville felt a sense of frustration with the windy conditions. Instead, the sentence emphasizes the "speed of the machine relative to the air" and presents the equivalent flight length if the machine had flown through calm air ("the length of the flight was equivalent to a flight of 540 feet made in calm air"), details that emphasize the importance of the Wrights' accomplishment.
 - B. CORRECT.** In the sentence from paragraph 5, Orville uses the wind velocity and the machine speed to highlight the distance that the plane covered while in the air and to determine the distance that it would have flown on a day with calm winds, which emphasizes the magnitude of the accomplishment.
 - C.** Incorrect. Since Orville does not suggest in the sentence from paragraph 5 how far the plane traveled under the actual conditions of high winds, the comparison is incomplete. Additionally, this statement does not address the reason that he would make such a comparison, which allowed him to describe the flight in more impressive terms (540 feet versus 120 feet).
 - D.** Incorrect. Unlike the wind velocity calculations made in preparation for the flight, which might help in determining the success of future flights, the comparative calculations that Orville provides in the sentence from paragraph 5 help interpret the results of the first flight (by describing how fast and far the machine flew relative to the flying conditions) and thereby communicate its success. The calculations of the first flight's relative speed and equivalent distance would not affect the success of future flights, but the information does provide context for understanding the Wright brothers' accomplishment.
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- 22.** The question asks how the sentence contributes to paragraph 5.
- E.** Incorrect. The sentence focuses on the "sudden dart" of the plane, which ended the flight. According to the paragraph, this sudden dart was caused by the difficulty of controlling the front rudder "on account of its being balanced too near the center." The sentence does not detail the need for the pilot to have quick reflexes.
 - F. CORRECT.** The sentence presents the idea that the difficulty of operating the machine brought the flight to a quicker end than it might otherwise have had. According to paragraph 5, "control of the front rudder was difficult on account of its being balanced too near the center. This gave it a tendency to turn itself when started." These sentences show that one such "dart" shortened the flight.
 - G.** Incorrect. Although it describes the abrupt end of the flight, the sentence does not describe the shift in wind speed. The word "dart" refers instead to a change in the height, or altitude, of the machine.
 - H.** Incorrect. Although it includes the detail that the flight ended "a little over 120 feet from the point at which it rose into the air," the sentence does not provide an overview of the entire flight's progression. The sentence from paragraph 5 omits the flight's takeoff and only describes its rather abrupt ending.

- 23.** The question asks what idea is most clearly conveyed by the words “only,” “nevertheless,” and “finally” in the sentence from paragraph 5.
- A.** Incorrect. Although the duration of the flight was short and a successful flight had taken a long time to achieve, the words in the sentence from paragraph 5 are used to emphasize the remarkable nature of the flight, not the length of time it had taken the Wright brothers to be successful.
 - B.** Incorrect. While it is easy to imagine that the Wright brothers had hope for longer flights, the words in the sentence from paragraph 5 do not relate directly to this sentiment; instead, they describe the groundbreaking success of their flight.
 - C.** Incorrect. While the capabilities of the aircraft were demonstrated during the flight, the words in the sentence from paragraph 5 apply not only to the machine but also to the efforts of the people who designed it, built it, and actually made it fly.
 - D. CORRECT.** The words in the sentence from paragraph 5 suggest that, though the first flight may not have lasted very long or taken the pilot very far, the Wright brothers accomplished something no one had been able to do before: successfully pilot an airplane in flight.
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- 24.** The question asks which sentence from the excerpt best supports the idea that the Wright brothers had to adapt their plans for the flight in order to accommodate weather conditions.
- E.** Incorrect. Although the sentence from paragraph 1 mentions the rainy weather and frozen puddles, it does not specifically explain how these weather conditions forced the brothers to adapt their plans for the flight.
 - F. CORRECT.** The sentence from paragraph 1 reveals that the Wright brothers adapted by making a risk calculation, based on the wind speed, before the flight. The high speed of the wind could cause difficulties in flight while simultaneously allowing for a slower, more controlled landing.
 - G.** Incorrect. The sentence from paragraph 4 does mention wind, but it describes what Orville was doing during the attempted flight, not the factors he considered before the flight in order to adapt the plan.
 - H.** Incorrect. Although the sentence from paragraph 5 mentions the “irregularity of the air” during the flight, the sentence does not describe how the brothers adapted their plans for the flight based on the weather.

25. The question asks how the use of chronological structure contributes to the development of ideas in the excerpt.

- A. CORRECT.** Through the chronological structure, Orville addresses all stages of the flight in a way that builds from flight concerns and preparations for takeoff to his experiences during the flight and his successful landing.
- B.** Incorrect. While obstacles are presented within the excerpt, the chronological structure emphasizes the events that ended in the successful achievement of flight on that day rather than how the Wright brothers overcame obstacles.
- C.** Incorrect. The chronological structure of the excerpt does not show that the Wright brothers applied lessons learned from their previous attempts at flight; instead, the structure describes Orville's December 17 attempt.
- D.** Incorrect. While Orville's narrative certainly shows a strong need to analyze wind speed, this idea is not conveyed through the chronological structure of the excerpt. Additionally, the description of the first flight on December 17 indicates that it did not take place in ideal conditions ("We realized the difficulties of flying in so high a wind" [paragraph 1] and "The course of the flight up and down was exceedingly erratic, partly due to the irregularity of the air" [paragraph 5]).

Excerpt from "The Spirit of the Herd"

- 26.** The question asks which sentence from the excerpt best explains why Wade reserved Peroxide Jim for "emergency work" (paragraph 1).
- E.** Incorrect. While the sentence from paragraph 1 refers to Peroxide Jim as being a superior horse, it does not tell why he would be useful in an emergency. The mention of Peroxide Jim's superiority does not describe the attributes that would make him an appealing choice for use in an emergency.
 - F.** Incorrect. The sentence from paragraph 10 does not describe the actions of Peroxide Jim. The sentence describes what Wade and the horse were experiencing, but it does not include any reference to how Peroxide Jim was responding to the situation.
 - G.** Incorrect. The sentence from paragraph 11 describes Wade's experiences and does not focus on the actions of Peroxide Jim. It reveals Wade's awareness of the danger he was in, but the only reference to Peroxide Jim in this sentence is the description of the horse having to work harder to run on the stonier ground as they neared the edge: from "the plunging of the horse," Wade knew "that the ground was growing stonier, that they were nearing the rocks." This quotation does not show that Peroxide Jim was the right horse to use for emergency work because it does not indicate, at this point in the text, that he was responding in a way that saved the herd or Wade.
 - H. CORRECT.** The sentence from paragraph 16 describes Peroxide Jim's high level of skill and ability to perform in a life-and-death situation. Not only did Peroxide Jim recognize the emergency immediately ("From the flash of the lightning the horse had taken the bit"), but the horse also proved to have the physical capability ("had covered an indescribably perilous path at top speed, had outrun the herd and turned it from the edge of the rim rock") and the mental toughness ("without a false step or a tremor of fear") required to respond appropriately to the dangerous situation.

27. The question asks how paragraphs 1–2 contribute to the development of the central idea of the excerpt.

- A. CORRECT.** The description of Peroxide Jim in paragraph 1 indicates that the horse was a fine animal (“Along with the wagon had come the fresh horses—one of them being Peroxide Jim, a supple, powerful, clean-limbed buckskin, a horse, I think, that had as fine and intelligent an animal-face as any creature I ever saw” [paragraph 1]). The statement in paragraph 2 that Wade’s “faith in Peroxide Jim was complete” supports the central idea of the excerpt that Wade believed in Peroxide Jim’s abilities even before the horse turned the herd and saved the cattle.
- B.** Incorrect. Paragraphs 1–2 do not emphasize Wade’s high expectations for himself, nor are these expectations a central idea of the excerpt. The narrator expresses a high opinion of Wade’s abilities in his comparison of Peroxide Jim and Wade, referring to the horse as a “complement” (paragraph 1) for Wade; however, Wade showed complete trust in the horse’s ability to save the herd without his help, as evidenced by Wade dropping the reins to allow the horse to control the situation (paragraph 12).
- C.** Incorrect. The paragraphs refer to Peroxide Jim’s ability to handle cattle; in fact, paragraph 2 says that “the horse knew the cattle business.” It can be inferred that Wade had this knowledge as well, but this idea is not the focus of paragraphs 1–2 and is not the central idea of the excerpt.
- D.** Incorrect. Wade’s ability to judge a horse’s competence is not a central idea of the excerpt. The event described in the text is proof that Wade knew how to judge a horse’s ability: Wade trusted Peroxide Jim, and Peroxide Jim did not let him down. The option puts the focus on Wade and one of his strengths, when the central idea and focus of the excerpt is Peroxide Jim’s abilities and strengths, not Wade’s.

28. The question asks how paragraph 3 conveys the effect of the setting on the cattle drive.

- E.** Incorrect. The riders were not trying to move the herd through the darkness. Instead, the reference to the growing darkness ("overtaken by the dusk") indicates that the riders had halted the animals for the night because moving the herd across the desert in the darkness would have been much too dangerous because of the sheer drop-off at the edge of the tableland. The riders needed the daylight to navigate the herd safely through the "pass descending to the next lower bench."
- F. CORRECT.** Paragraph 3 describes the land where the herd was as being "as level as a floor" but "rimmed by sheer rock, from which there was a drop to the bench of sage below." The drop was "a perpendicular fall of about three hundred feet"—any animal or person could fall over that edge. It was the change in height, from flat tableland to sheer drop-off, that made the terrain so dangerous.
- G.** Incorrect. The use of the word "desert" in the first sentence of the paragraph does not highlight the isolation of the setting or indicate that the riders and the herd were uncomfortable being alone. Instead, the word merely establishes the setting where the action occurred: "it lay as level as a floor, rimmed by sheer rock, from which there was a drop to the bench of sage below."
- H.** Incorrect. The excerpt does not indicate that the steep terrain made it difficult for the herd to move forward. The herd was not expected to navigate the steep terrain. Instead, the steep terrain presented a danger to the herd that must be avoided. The riders intended to move the herd safely through passes that descended gradually to lower elevations.

29. The question asks how paragraph 9 fits into the overall structure of the excerpt.

- A.** Incorrect. Wade was alert long before the events of paragraph 9. In paragraph 4, he began singing to the cattle because he knew that they were on the verge of stampeding. He was even more alert when he “caught a breath of fresh, moist wind with the taste of water in it” (paragraph 6) and heard thunder in paragraph 8: “The sound seemed to come out of the earth, a low, rumbling mumble.”
 - B.** Incorrect. Wade and the other riders were not calm; rather, they were alert and attempting to keep the cattle calm by singing to them. They were as prepared as they could be for what was about to happen, as shown in paragraph 1, through the selection of fresh horses and, specifically, Wade’s choice to ride Peroxide Jim in the face of possible danger: “Wade had been saving this horse for emergency work.”
 - C.** Incorrect. Although Wade’s leadership is implied in paragraph 9 (“He must keep them going. He touched his horse to ride on with them”), his leadership is revealed in earlier portions of the excerpt as well (“Wade had been saving this horse” [paragraph 1]; “Wade began to sing” [paragraph 5]), so this is not new information being introduced in paragraph 9 of the excerpt.
 - D. CORRECT.** Paragraph 9 describes the lightning strike that made the cattle panic and stampede. The stampede is the main conflict Wade and Peroxide Jim addressed in the excerpt; and therefore, paragraph 9 fits into the overall structure of the excerpt by presenting the incident that caused the main conflict.
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30. The question asks what the phrase “bore down the flank of the herd” (paragraph 13) conveys about Wade.

- E.** Incorrect. While Wade struggled to see the front of the herd, the words “bore down the flank of the herd” (paragraph 13) are meant to convey the intensity of the situation Wade was in, not the way the herd is blocking his vision.
- F.** Incorrect. The sentence from paragraph 13 states that the herd was “close on their left” and includes the phrase “bore down.” Both of these phrases indicate that Wade was trapped between the stampeding herd and the steep cliff. Wade and Peroxide Jim were struggling to reach the very front of the herd to turn it away from the edge.
- G. CORRECT.** The phrase “bore down the flank of the herd” from paragraph 13 conveys the overwhelming strength of the herd. The herd was forcing Wade toward the cliff. The wording in the quotation emphasizes the immediate danger of the situation and conveys the idea that Wade and Peroxide Jim were almost forced over the edge of the precipice by the stampeding herd.
- H.** Incorrect. The phrase “bore down the flank of the herd” (paragraph 13) does not indicate anything about the fear felt by the herd. The phrase is about Wade’s position between the edge of the stampeding herd and the drop-off. Wade was aware of the danger the herd was in if he and Peroxide Jim could not turn the cattle from the edge.

- 31.** The question asks how the sentences from paragraph 11 and paragraph 16 develop a central idea in the excerpt.
- A.** Incorrect. While Peroxide Jim's presence was critical to saving the herd, the details in paragraph 11 and paragraph 16 do not focus on this idea. The primary idea is that the horse was so intelligent and aware that he acted on his own.
 - B.** Incorrect. The excerpt does not tell who trained Peroxide Jim. It can be inferred that Peroxide Jim had been well trained and was knowledgeable of working cattle; however, there is no indication that Wade was the person who trained Peroxide Jim, only that Wade knew of Peroxide Jim's abilities, respected the skilled horse, and was "saving this horse for emergency work" (paragraph 1). Because the reader cannot infer from the excerpt that Wade was the trainer, this idea cannot be considered central to the excerpt.
 - C. CORRECT.** Wade recognized that Peroxide Jim knew to turn the herd without any instruction from him. Throughout the excerpt, Wade exhibited confidence in his horse, Peroxide Jim. For example, the narrator says that Wade's "faith in Peroxide Jim was complete" in paragraph 2. After Wade let go of the reins (paragraph 12), the horse took over, doing exactly what needed to be done to save Wade, the herd, and himself: "a big white steer, which the horse, with marvelous instinct, seemed to pick out from a bunch, and to cling to, forcing him gradually ahead, till, cutting him free from the bunch entirely, he bore him off into the swishing sage" (paragraph 14).
 - D.** Incorrect. The sentence from paragraph 11 and the sentence from paragraph 16 show that Peroxide Jim acted skillfully and with the knowledge that the ride was dangerous ("Wade was riding for his life. He knew it. His horse knew it" [paragraph 11]). There is no indication that Peroxide Jim was not afraid; in fact, it is likely the awareness of the danger and the fear associated with that knowledge contributed to the horse's motivation to turn the herd.

32. The question asks how the details in paragraphs 14–16 help convey a central idea of the excerpt.

- E. CORRECT.** Paragraphs 14–16 describe how Peroxide Jim’s “marvelous instinct” headed off the herd and drove it away from the cliff. Wade acknowledged that without his instruction, Peroxide Jim knew to find the leader of the herd, cut him off from the rest of the herd, and then lead him to safety, confident that the remainder of the herd would follow. Paragraph 16 confirms this: “Whose race was it? It was Peroxide Jim’s, according to Wade, for not by word or by touch of hand or knee had the horse been directed in the run.” This reinforces a central idea of the excerpt regarding the horse’s amazing intellect and ability.
 - F.** Incorrect. Although paragraphs 14–16 mention the “rim,” the “cliffs,” and the “indescribably perilous path,” these details are not the focus of the paragraphs. They are descriptions of the setting where Peroxide Jim’s able and effective actions saved the stampeding herd, and it is these actions that are the central idea being conveyed.
 - G.** Incorrect. Although Peroxide Jim is called “powerful” in paragraph 1, his physical strength is neither a central idea of the excerpt nor the focus of paragraphs 14–16. His success at turning the herd was attributed to his intellect and instinct, not his physical strength.
 - H.** Incorrect. The excerpt does not suggest that Peroxide Jim anticipated the herd’s stampede before the men did. In fact, the excerpt indicates that Wade led the men in singing to cover sudden noises that might cause the herd to stampede, indicating that Wade was alert to that possibility. Paragraph 7 also indicates that Wade anticipated the stampede, as he “checked his horse instantly” and “tightened [his] grip on the reins” as soon as he smelled the rain and heard the low rumble of thunder that preceded the lightning strike. The narrator notes Wade’s actions well before the horse’s actions. Paragraphs 14–16 describe how Peroxide Jim acted after the stampede began.
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33. The question asks which sentence from the excerpt best reveals the mood on the drive before the lightning struck.

- A.** Incorrect. The sentence from paragraph 3 describes the setting but does not contain words that create a strong mood. In fact, this sentence shows that while there were dangerous surroundings, the riders and the herd were “now halted.”
- B. CORRECT.** The sentence from paragraph 5 describes the riders singing “to preempt the dreaded silence, to relieve the tension” and to prevent “shock” from any sudden noise. These words provide a strong sense of the tense, heavy mood in which a terrible event such as a stampede could quickly happen.
- C.** Incorrect. In the sentence from paragraph 7, Wade has become aware of a change in the weather (“caught a breath of fresh, moist wind with the taste of water” [paragraph 6]) and is seeking to verify it. Even though a rainstorm was one concern the riders had, the words describing Wade’s immediate reaction to his discovery do not best convey the mood of dread and foreboding that the men and horses feel just before the lightning strike.
- D.** Incorrect. While the words “ghostly” and “still moving in a circle” in the sentence from paragraph 9 create a strange and mysterious image, the mood before the lightning struck was not one of mystery or suspense. Instead, these descriptive words are used to indicate Wade’s faint ability to see the herd moving in the dark.

A Miracle Mile

34. The question asks how the words “feat,” “humanly impossible,” and “impenetrable barrier” in paragraph 1 affect the tone of the paragraph.
- E. Incorrect. Although paragraph 1 states that “several elite runners aimed to break that supposedly impenetrable barrier,” the words “feat,” “humanly impossible,” and “impenetrable barrier” suggest that the goal was unattainable even for the most skilled runners.
 - F. **CORRECT.** No one had ever been able to run a mile in less than four minutes, and the words “feat,” “humanly impossible,” and “impenetrable barrier” imply that the goal seemed unattainable. These words also reinforce the comparison of running a four-minute mile to “scaling Mount Everest” (paragraph 1).
 - G. Incorrect. The words “feat,” “humanly impossible,” and “impenetrable barrier” describe how challenging and almost impossible running a four-minute mile seemed, and while other elite runners “aimed to break that supposedly impenetrable barrier” (paragraph 1), the paragraph focuses on Roger Bannister, not the competition among elite runners seeking to break the record.
 - H. Incorrect. Bannister’s training program is described in paragraphs 3 and 4, and the words “feat,” “humanly impossible,” and “impenetrable barrier” are used in paragraph 1 to describe the magnitude of Bannister’s goal to run a four-minute mile. Though his training program was intense, these words relate to the intensity of the goal itself, not to the intensity of his training.
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35. The question asks which sentence best supports the idea that Bannister needed an alternative to “logical planning” (paragraph 3) in order to accomplish his goal.
- A. Incorrect. The outcome of the 1952 Olympics, referenced in the sentence from paragraph 2, is what prompted Bannister to seek a new goal: “Determined to redeem himself, Bannister . . . focused on the ultimate prize—breaking the four-minute-mile barrier” (paragraph 2).
 - B. Incorrect. The sentence from paragraph 3 does not show an alternative to Bannister’s training plan to “develop endurance and speed” (paragraph 3) and his focus on using logical planning in order to accomplish his goal.
 - C. Incorrect. The sentence from paragraph 4 focuses on details of his training plan, explaining the “intensive interval training” (paragraph 3) that Bannister used to build his endurance and speed, not an alternative form of preparation.
 - D. **CORRECT.** The sentence from paragraph 4 explains that Bannister reached a point where he could not improve his time despite the strict training plan he had created. Taking a break from his training to spend time mountain climbing “permitted his muscles to recuperate and left him feeling refreshed” (paragraph 4).

36. The question asks how the sentences from paragraph 7 contribute to the development of ideas in the passage.

- E. CORRECT.** The sentences from paragraph 7 show that toward the end of the race, Bannister knew that the goal of breaking the four-minute-mile barrier was within his grasp and that he had the focus necessary to achieve it. The sentence following Bannister's quotation states that he did indeed meet his goal, crossing "the finish line in 3 minutes 59.4 seconds" (paragraph 7).
 - F.** Incorrect. The feelings Bannister expressed in the sentences from paragraph 7 did not erase those feelings related to his loss at the 1952 Olympics, which were what drove him to the achievement he was about to make.
 - G.** Incorrect. While the quotation states that Bannister felt "unity," this pertains to his running, not to his work with the team. The sentences from paragraph 7 capture Bannister's focus on his chance to break the barrier and what he was feeling at that moment.
 - H.** Incorrect. The sentences from paragraph 7 express Bannister's realization that he was on the verge of reaching a goal. The sentences show that in the seconds before crossing the finish line, Bannister was fully focused on the end goal and was not thinking about his training or his running technique.
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37. The question asks what idea is conveyed by the phrase "a new mindset had taken root" in paragraph 8.

- A. CORRECT.** After Bannister ran the mile in under four minutes, it became clear to other runners that this goal was within the realm of human ability, and "soon after Bannister's achievement, four other athletes matched his performance" (paragraph 8).
- B.** Incorrect. While the passage states that runners broke the four-minute-mile barrier after Bannister initially broke it ("Soon after Bannister's achievement, four other athletes matched his performance" [paragraph 8]), running a four-minute mile is still impressive and a challenge for elite runners.
- C.** Incorrect. Although runners most likely knew that the training needed in order to break the four-minute-mile barrier was difficult and intensive, the phrase "a new mindset had taken root" focuses on their belief in the possibility of breaking the four-minute-mile barrier, which had been viewed as a "supposedly impenetrable barrier" (paragraph 1), not the idea that the training was difficult.
- D.** Incorrect. Even though "four other athletes matched his performance" and "the record continued to fall" (paragraph 8), the phrase "a new mindset had taken root" does not refer to the idea that there was an increase in the number of runners entering races just to try breaking the four-minute-mile barrier.

- 38.** The question asks which sentence indicates that Bannister nearly made a mistake that would have cost him the world record.
- E.** Incorrect. The sentence from paragraph 4 describes a challenge Bannister faced during his training period, when he used “intensive interval training to develop endurance and speed” (paragraph 3). Bannister ran laps on a “quarter-mile track” (paragraph 3) and was able to control his pace at this time—unlike during the actual race to break the record.
 - F.** Incorrect. The sentence from paragraph 6 describes the start of the race and Brasher’s role as “first rabbit” for Bannister. Bannister was behind Brasher, following their plan for breaking the record.
 - G. CORRECT.** If Bannister had begun running faster than the “steady but grueling pace” (paragraph 7) set by his “rabbit,” he would likely not have had enough energy to finish the race. As paragraph 6 notes, “the runner conserves about 15 percent of his or her effort” by allowing the rabbit to set the pace. Bannister had “lost his instinctive feel for his pace” (paragraph 7) in the excitement of the race. If he had given in to his impulse to run faster and bypassed the rabbit at that point in the race, it would have cost him energy, and, in turn, the record.
 - H.** Incorrect. The sentence from paragraph 7 describes how Bannister leaped ahead of Chataway, his second “rabbit,” at the appropriate time in the effort to break the record. Chataway had “surged forward, leading Bannister at this same punishing rate for another lap and a half” (paragraph 7) before Bannister moved past him.
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- 39.** The question asks how Bannister’s loss in the 1952 Olympics influenced his decision to pursue breaking the four-minute-mile barrier.
- A.** Incorrect. While Bannister recognized the weaknesses that led to his poor performance in the Olympics and worked “to develop endurance and speed” (paragraph 3), the loss made him “determined to redeem himself” (paragraph 2). The desire for redemption influenced Bannister to focus specifically on running a mile in under four minutes, rather than on winning other races or training for other distances.
 - B.** Incorrect. Although Bannister developed an “intensive interval training” plan to improve his “endurance and speed” (paragraph 3), he applied a different approach only after his progress toward a four-minute mile reached a “plateau” (paragraph 4) in 1954. It was his desire to “shave off at least one more second in order to reach his target” (paragraph 4) that prompted him to take a break from interval training and go mountain climbing for three days.
 - C. CORRECT.** Bannister sought to redeem himself after “he finished in a dismal fourth place” at the Olympics (paragraph 2). He thought that his performance “was a disappointment for him and his country, Great Britain,” and he responded by setting a goal to successfully conquer the four-minute mile, which was considered the “ultimate prize” (paragraph 2).
 - D.** Incorrect. Bannister’s loss at the 1952 Olympics motivated him to change his training focus to reaching the “ultimate prize” (paragraph 2) of breaking the four-minute-mile barrier, which no other runner had accomplished. His loss at the Olympics did not present him with a specific opportunity to reach this goal.

40. The question asks how interval training affected Bannister's performance.

- E.** Incorrect. The moderation of his pace was achieved through the use of "rabbits," described in paragraph 6, more than through his method of interval training.
 - F.** Incorrect. Bannister worked individually during the interval training period and then paced himself with a two-person team of "rabbits," which were introduced in paragraph 5 and explained in paragraph 6. It was the use of "rabbits" during the race that helped him conserve some of his effort, not the interval training.
 - G. CORRECT.** As paragraph 3 states, the goal of Bannister's training program was to "develop endurance and speed," which are synonyms of the words "stamina" and "pace."
 - H.** Incorrect. Although Bannister "let his body recover for two minutes" (paragraph 3) during interval training, this was not the primary effect of the training on Bannister's performance. Instead, interval training allowed him to develop greater endurance and speed.
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41. The question asks how the author's use of chronological structure contributes to the development of ideas in the passage.

- A.** Incorrect. While paragraph 4 mentions the "plateau" Bannister dealt with and the break that "permitted his muscles to recuperate," the chronological structure of the passage focuses mainly on the progression of Bannister's process over time.
- B.** Incorrect. Even though the passage suggests that Bannister's ability to break the four-minute-mile barrier improved and that he felt "prepared to attempt to break the world record" (paragraph 4), the chronological structure of the passage primarily serves to show how Bannister's progress over time led to his success.
- C.** Incorrect. The chronological structure of the passage begins with an acknowledgment that Bannister was inspired to break the four-minute-mile barrier by his loss at the 1952 Olympics (paragraph 2); however, the overall organization of the passage highlights his dedicated efforts over time to break the four-minute-mile barrier.
- D. CORRECT.** The chronological structure of the passage follows the progression of Bannister's training from his loss at the 1952 Olympics to the race where he ran the first sub-four-minute mile on May 6, 1954 (paragraph 5).

Serpent Mound

42. The question asks how the poem's form contributes to the poem's meaning.
- E. **CORRECT.** The poem is structured as one long stanza. The line lengths throughout the poem and the line indents (such as those in lines 7–10) create a visual effect so that the poem itself mimics the shape of the Serpent Mound.
 - F. Incorrect. The uneven line lengths in the poem do not indicate the different interpretations of the mound; separate stanzas or other stopping points would more effectively point to contrasting ideas.
 - G. Incorrect. The dashes in the poem lead to further explanation of a thought, not a change of thought.
 - H. Incorrect. The lack of regular rhyme and meter is intended to create a conversational tone rather than show the speaker's struggle to grasp how large the mound is.
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43. The question asks which lines reveal how the setting affects the speaker and the men from the museum.
- A. Incorrect. The words "being winter" (line 8) work to establish the setting, but lines 8 and 9 do not describe the effect the winter setting has on the speaker and the men.
 - B. **CORRECT.** The imagery in lines 14 and 15 describes how the winter silence makes the speaker and the men feel emotional heaviness: it "pressed / down on all of us like a weight."
 - C. Incorrect. Although the words "the humps in the ground were all but / invisible" describe how the setting appears to the speaker and the men, lines 16 and 17 do not describe how the setting affects them.
 - D. Incorrect. Although lines 21 and 22 do describe the setting, the lines do not describe how the setting affects the speaker and the men. The lines describe the setting in the summer, which is before the men from the museum show up.

44. The question asks how lines 1–2 contribute to the development of ideas in the poem.
- E. Incorrect. The idea that the men are too busy with their work to talk to the speaker is not conveyed in the poem, and, in fact, one of the museum men discusses the oval mound with the speaker (“as if swallowing the sun, one of the museum / men suggested” [lines 32–33]).
 - F. **CORRECT.** The lines, with their mention of measuring tapes and sketchbooks, indicate that the reasons the museum men came were to measure the mound and to draw sketches of it.
 - G. Incorrect. There is little indication in the poem that the museum men have a hidden motive for studying the mound. Lines 1–2 present a straightforward description of the men and their equipment, which emphasizes the men’s academic interest in studying the mound.
 - H. Incorrect. While the speaker displays some curiosity about the work the museum men are doing (“one of the museum / men suggested, taking notes with his quill pen, / an old-style inkhorn slung at his side. / I liked that” [lines 32–35]), lines 1–2 focus on introducing the idea that the mound is a formation that is worth formal study and examination by experts.
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45. The question asks how line 28 contributes to the development of ideas in the poem.
- A. Incorrect. Although the museum men are documenting the shape of the mound in line 33, lines 29–32 and 35–41 focus on what the oval mound represents as interpreted by the museum men, the speaker, and the speaker’s sister.
 - B. Incorrect. While the lines preceding line 28 describe the body of the snake in detail (“you could climb / a tree and get some idea of the whole thing: / the serpent’s body undulating, slithering / silently across the ancient / earth” [lines 24–28]), the purpose of line 28 is to begin the development of the ideas about the oval shape at the end of the mound: the serpent’s mouth.
 - C. **CORRECT.** Line 28 introduces the presence of the oval mound at the mouth of the snake. The meaning of this oval is of great interest to the museum men and the speaker. Line 28 leads to the idea that there is speculation about the oval mound (“as if the snake were about to swallow an egg” [line 29], “as if swallowing the sun” [line 32], and “It is singing to the sun” [line 38]).
 - D. Incorrect. The speaker does not say that the oval shape near the end of the mound is difficult to see. Earlier, the speaker says that the ridges of earth are difficult to see unless you are near them, but the speaker does not say this about the oval shape.

- 46.** The question asks what impact the phrases “all but / invisible” and “even less obvious” in lines 16–18 have on the meaning of the poem.
- E. CORRECT.** The words “all but / invisible” indicate that a person must be close to see the humps in the ground, while the phrase “even less obvious” indicates that a person must be far away to see the overall snake shape of the mound.
 - F.** Incorrect. While the speaker has to lead the museum men to the mound because they did not know the exact location, the words in lines 16–18 are related to the difficulty in viewing the mound from the immediate surrounding area.
 - G.** Incorrect. The speaker is willing to take the museum men out to study the mound, so there is no indication in the poem that the speaker wants the location of the mound to remain a secret. The words in lines 16–18 convey the idea that the mound is difficult to see.
 - H.** Incorrect. While the speaker contemplates the significance of certain elements of the mound, the phrases in lines 16–18 relate to a viewer’s ability to see the physical shape of the mound, not its deeper meaning.
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- 47.** The question asks what impact the words “swish,” “chitter,” and “cry” in lines 12–13 have in the poem.
- A. CORRECT.** The words highlight the sounds of the animals that visit the mound in the summer: the “swish of a beaver’s heavy tail” (line 12), the “chitter of a chickadee” (line 13), and the “cry of a hawk” (line 13). These words help contrast the quiet stillness of the setting around the mound in the winter.
 - B.** Incorrect. While the words in lines 12–13 convey the sounds certain animals make in the summer, the sounds of the animals that live near the mound are a natural part of life in the area, not a disruption.
 - C.** Incorrect. The speaker is contrasting the sounds of the animals around the mound during the rest of the year with the silence of the winter months, not merely indicating the variety of wildlife.
 - D.** Incorrect. The speaker expresses the idea that the mound is more visible in the winter because of the lack of brush (“It being winter, / there was little underbrush to speak of” [lines 8–9]). Then lines 12–13 describe sounds, not the appearance of the mound in winter.

48. The question asks how the interaction between the speaker and Ruth in lines 37–41 conveys a central idea of the poem.
- E. Incorrect. While there are many different interpretations of the mound’s meaning, there is no way to determine which of the interpretations is most accurate, and there is no way to know the mound’s true purpose.
 - F. **CORRECT.** The interaction references Ruth’s interpretation of the open-mouth shape as a serpent singing to the sun. This interpretation creates a joyful mood. The speaker contrasts this perspective with the idea that the mound is swallowing the sun, which creates a more aggressive feeling. These various interpretations of a physical shape arise out of what the individuals feel when they look at the mound.
 - G. Incorrect. The speaker does not describe any benefit to considering what different people imagine when they see the mound. Instead, the speaker is simply describing different interpretations.
 - H. Incorrect. Ruth’s interpretation of the mound’s shape is fanciful and symbolic. It is unlikely that scientific study would change the minds of people such as Ruth about the meaning of the mound.
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49. The question asks how the poet uses dialogue to contrast the points of view of the speaker and Ruth regarding the mound.
- A. Incorrect. The interpretation Ruth offers of the mound as a snake singing is abstract, but Ruth does not seem concerned that it is an overly metaphorical or figurative interpretation. The dialogue serves to highlight that Ruth is firm in her belief.
 - B. Incorrect. There is no indication that the museum men are considering Ruth’s interpretation of the mound or that Ruth wants them to share her interpretation. Ruth’s interpretation is meant to convey an abstract idea, while the museum men would be looking for a firm academic explanation of the mound. Ruth is persistent in her belief, and the dialogue does not suggest that she is concerned with the museum men’s interpretation or findings.
 - C. Incorrect. Ruth merely states her interpretation and says that she thinks she hears the Serpent Mound singing sometimes. She does not seek to make the speaker agree with her.
 - D. **CORRECT.** Beginning in line 37, after the speaker suggests the mound is swallowing the sun, Ruth disagrees. The poet uses the word “insisted” in line 39 to show that Ruth firmly believes in her own interpretation of the mound.

A Memory Revolution

- 50.** The question asks how the details in paragraph 3 about cognitive offloading convey a central idea of the passage.
- E.** Incorrect. Although paragraph 3 describes the Internet as “a vast extended memory,” it does not discuss reliance on the Internet for information. The paragraph states that the Internet “allows people to digitally access and retrieve much larger volumes of information” and indicates that this benefit leaves people free to focus on “connecting data, learning new information, or solving problems.” However, these details about the benefits of the Internet do not express an opinion about the inevitability of Internet reliance.
 - F. CORRECT.** A central idea of the passage is that the Internet is changing how people retain information. Paragraph 3 supports this idea by stating that “a similar process has been taking place for centuries” and that “in the past,” resources such as encyclopedias were used to store and find information. The details provided in paragraph 3 about encyclopedias and the Internet show that people have always used resources to remember information and that these resources change over time as people develop new ways to “assist their memories.”
 - G.** Incorrect. While paragraph 3 does compare the use of encyclopedias to obtain information in the past with the use of today’s Internet, this comparison fails to convey the central idea of the passage that the Internet is changing how people remember information.
 - H.** Incorrect. Although paragraph 3 states that “much larger volumes of information” are available on the Internet than what has been available in previous methods of information storage, such as encyclopedias, this fact does not relate to an increase in the ability to understand that information and is not a central idea of the passage.

- 51.** The question asks how the details of the experiment described in paragraph 5 convey a central idea of the passage.
- A.** Incorrect. Although paragraph 5 states that participants read the trivia facts and then “typed the statements into a computer file,” it does not explain the impact of repetition on memory, nor does this convey a central idea of the passage.
 - B.** Incorrect. Paragraph 5 acknowledges that people evaluate which information is important enough to remember, but it does not describe the rate at which people forget unimportant information. According to the paragraph, information is considered less important to remember if a person believes that he or she will be able to retrieve that information easily in the future. This does not mean the information is unimportant but rather that it is readily available for future access.
 - C.** Incorrect. Paragraph 5 specifies the number of trivia facts that study participants were given to read (forty), but it does not describe the amount of information as a factor in the participants’ memory performance. According to the paragraph, it was not the amount of information but rather the expectation of future availability that affected how much information participants were able to recall.
 - D. CORRECT.** A central idea of the passage is that the way the human memory stores information is changing because of the Internet. The details of the experiment support this idea by indicating that study participants remembered different amounts of information based on whether they “thought the information would be saved” (paragraph 5). Those who “believed the information would be erased and no longer available” (paragraph 5) remembered 40 percent more than those who expected to be able to access the information again in a saved computer file. Therefore, paragraph 5 conveys the central idea that the expectation of future access to information is a key element in “how people evaluate which information deserves their effort to remember.”

- 52.** The question asks how the sentence from paragraph 7 contributes to the structure and development of ideas in the passage.
- E.** Incorrect. Although the studies showed, in part, that reliance on the Internet is increasing (“participants recalled the information’s location more often than the content itself” [paragraph 6]), the studies were not conducted in order to determine the risks of Internet use. The claim in the sentence did not prompt the research described in paragraphs 2 and 6.
- F.** Incorrect. While the sentence in paragraph 7 poses a question about the disadvantages of relying on the Internet, paragraphs 2 and 6 present the study data on Internet use and memory in a neutral tone (“correctly identifying 49 percent of the folders for specific facts while remembering only 23 percent of the actual trivia” [paragraph 6]). Neither study describes the availability of information on the Internet as an advantage or a disadvantage.
- G. CORRECT.** Paragraphs 2 and 6 describe the results of experiments related to the Internet’s effect on memory without commenting on the advantages or disadvantages of relying on that technology, and the sentence in paragraph 7 presents a questioning viewpoint that moves away from the neutral perspective of the broader passage. The opinion in the sentence is directly argued against in the three sentences that follow it, which present an extended quote from Steven Pinker, a psychology professor at Harvard University. Pinker refutes the idea expressed by the sentence, stating that “knowledge is increasing exponentially; human brainpower and waking hours are not.” He adds that technologies such as the Internet “are the only things that will keep us smart.”
- H.** Incorrect. Although the sentence in paragraph 7 expresses caution about the possible effects of the Internet on memory, the passage does not shift from an optimistic tone to a cautious tone. Actually, paragraph 6 provides the data on Internet use and memory in a neutral tone. The argument expressed by the sentence is also not elaborated on in the sentences that follow, but is immediately argued against by Steven Pinker, a professor of psychology. The last sentence of paragraph 7 in fact refutes the cullled sentence: “ ‘Far from making us stupid, these technologies are the only things that will keep us smart.’ ”

- 53.** The question asks how the study described in paragraph 6 influenced researchers' ideas about memory in the digital age.
- A.** Incorrect. The study required participants to organize information into folders, but the results suggest that organizing the information did not make the information easier to remember; instead, participants remembered the folder in which to find the information but forgot the information itself.
 - B.** Incorrect. Although the participants in the study were given a keyword, such as "ostrich," when asked to remember "which folder contained a particular fact," the study was significant for researchers because it demonstrated that "our memory is adapting to the Internet age by prioritizing where to locate information even when the specific details are forgotten" (paragraph 6). The study confirmed that participants were remembering where the information was stored, because they were able to provide the name of the folder (keyword) where the information was stored.
 - C. CORRECT.** The study in paragraph 6 demonstrated that participants were better able to recall where to find certain information than to recall the information itself. This influenced researchers' ideas about memory in the digital age: "Overall, participants recalled the information's location more often than the content itself, correctly identifying 49 percent of the folders for specific facts while remembering only 23 percent of the actual trivia" (paragraph 6).
 - D.** Incorrect. The study did not examine the relative importance of remembering basic information or storing detailed information. It examined the effect of the Internet on the information that people remember and concluded that human memory "is adapting to the Internet age by prioritizing where to locate information" (paragraph 6).
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- 54.** The question asks how the diagram provides additional support for the topic presented in the passage.
- E.** Incorrect. While the diagram indicates that the human brain has the ability to maintain different types of memory, the diagram does not show the need for the brain to adapt to obtaining information from the Internet rather than from other sources.
 - F.** Incorrect. The diagram enhances the reader's understanding of how long-term memories are formed, but it does not provide details about how the Internet can be used to improve long-term recollection of information.
 - G.** Incorrect. The diagram provides an understanding of how details that are important to people can become stored because of an effort made to recall them. However, the diagram does not show how people decide which information is important and which is not.
 - H. CORRECT.** The diagram depicts the connections that the human brain maintains between the different forms of memory. It also illustrates the idea that repetition and rehearsal are important steps in creating memories, as unrehearsed information will be forgotten. This supports the passage by highlighting the idea that access to search engines and other tools leads people to skip rehearsal and repetition steps that create memories, because people know that the information is readily accessible.

55. The question asks for the evidence from the passage that is most relevant to the claim in paragraph 7 that “ ‘far from making us stupid, these technologies are the only things that will keep us smart.’ ”
- A. Incorrect. Whether the participants decided to use the Internet to answer easy trivia questions varied based on the options that the participants were given during the first part of the experiment and, therefore, cannot be relevant to the claim in paragraph 7. Even when given the option of using the Internet, some participants chose to recall information from memory instead.
- B. **CORRECT.** The assertion made in paragraph 3 that states that cognitive offloading allows for “people’s minds [to be] free for other cognitive feats, such as connecting data, learning new information, or solving problems” is relevant to the claim in paragraph 7 because it indicates that the ability to store large amounts of information within the brain does not necessarily make someone smart. It also suggests that if people did not have to use so much effort simply organizing and storing information, their brain would be free to conduct higher-order tasks: “the Internet, serving as a vast extended memory, allows people to digitally access and retrieve much larger volumes of information. Consequently, people’s minds are free for other cognitive feats, such as connecting data, learning new information, or solving problems” (paragraph 3).
- C. Incorrect. The discussion in the passage connecting how people organize information in their mind and their ability to recall that information focuses on the process of organizing information within human memory rather than on how technology helps keep people’s minds available for complex thoughts.
- D. Incorrect. Although the passage provides an accurate description of transactive memory, it provides no indication of how using such memory would advance a person’s ability to maintain or improve intelligent thought.

- 56.** The question asks which sentence from the passage suggests that using Internet search engines may lead people to rely less on their own ability to recall information.
- E.** Incorrect. While the sentence in paragraph 1 refers to the increase in use that has made the Internet “an integral component” of everyday life for many people, it does not address memory or explain the effect of Internet use on a person’s ability to recall information.
 - F.** Incorrect. Although the sentence in paragraph 2 refers to research that was conducted to determine how the use of the Internet affects a person’s memory, the sentence simply explains one guideline of the study. The fact that the study required one group of participants to use Google does not indicate whether using a search engine affects the degree to which people rely on their own ability to recall information.
 - G. CORRECT.** The sentence in paragraph 2 reveals the results of a study that allowed half the participants to use Google to obtain answers to trivia questions and initially required the other half to use only their memory to answer questions. The sentence states that “83 percent of the Internet group continued to consult Google in the second round” and that “only 63 percent of the memory group chose to do so.” These statistics demonstrate that using Google in the first round resulted in participants in the Internet group relying more heavily on the Internet search engine to recall information in the second round, whereas participants who had not used Google in the first round were more likely to rely on their own ability to recall information.
 - H.** Incorrect. The sentence in paragraph 5 describes a task presented to participants in a research study. Although the study was designed to examine “how people evaluate which information deserves their effort to remember” (paragraph 5), the sentence does not indicate that use of Internet search engines prompted people to rely less on their own ability to recall information.

57. The question asks how the studies presented in the passage are used to illustrate the effect of the Internet on a person's memory.

- A. CORRECT.** The study described in paragraph 5 examined the effect of computer use on the way people evaluate information, specifically "which information deserves their effort to remember," and determined that "those who believed the information would be erased and no longer available could recall 40 percent more facts than those who thought the information would be saved." The study described in paragraph 2 established that the use of Internet search engines increases the "inclination to rely on the Internet in order to retrieve information" (paragraph 3), and the study in paragraph 6 examined how this reliance on technology affects the way people store information: "Overall, participants recalled the information's location more often than the content itself."
- B.** Incorrect. Although a difference in the ability of the human brain and the capacity of the Internet to locate information might seem evident, the studies cited in the passage did not examine the ability or the capacity of either. The studies did not measure what the human brain is capable of but rather how memory is affected by the use of the Internet.
- C.** Incorrect. While the studies explored the Internet's effect on the way information is stored in human memory, the type of information was not described or compared. Instead, the studies indicated that location is the main difference between the information stored in the Internet and the information stored in human memory, noting that the Internet has become "an external source of the recollections and associative networks that constitute memory" (paragraph 6).
- D.** Incorrect. Although it is increasingly common to use the Internet to obtain information (paragraph 2) rather than try to memorize information (paragraph 5), the studies did not examine the difficulty or ease of obtaining/recalling information using either method.

- 58. (120)** There are 5 choices for the first digit, 4 choices for the second digit, 3 choices for the third digit, 2 choices for the fourth digit, and 1 choice for the final digit. The total number of possibilities is $5 \times 4 \times 3 \times 2 \times 1 = 120$.

59. (3) $\frac{147 - x}{12} = 12$
 $147 - x = 144$
 $x = 3$

60. (-3.4) $|(-6) - (-5) + 4.2| - |3 - 9.6| =$
 $|3.2| - |-6.6| = 3.2 - 6.6 = -3.4$

- 61. (300)** Let x be the total number of pages in the workbook. Then, 20% of x is 60. Set up a proportion and solve for x :

$$\frac{20}{100} = \frac{60}{x}$$

$$20x = 6,000$$

$$x = \frac{6,000}{20} = 300 \text{ pages}$$

- 62. (65)** Call the missing angle in the top half of the figure x . The sum of the four angles on the top of the figure is equal to 180° .

$$x + y + 30 + 60 = 180$$

Since x is a vertical angle with the 25° angle, then x is also 25° . Use that to solve for y .

$$25 + y + 30 + 60 = 180$$

$$y + 115 = 180$$

$$y = 65$$

63. (D) $x(x - 2y) = 9[9 - 2(-7)] =$
 $9(9 + 14) = 9(23) = 207$

- 64. (E)** Find the missing angle, angle QPT, of triangle PQT: $180^\circ - 70^\circ - 50^\circ = 60^\circ$

In parallelogram PQRS, angle QPT is congruent to angle QRS, so the measure of angle QRS is also 60° .

- 65. (D)** Break the equations apart to each equal M :

$$M = 3N$$

$$M = \frac{P}{4}$$

$$M = Q + 5$$

$$M = \frac{R}{7}$$

Pick a number to substitute into the equations, and solve the equations to find the values of M , N , P , Q , and R .

Let $M = 2$. Since all the equations are equal to 2, substitute 2 to find each variable.

$$M = 3N$$

$$2 = 3N$$

$$\frac{2}{3} = N$$

$$M = \frac{P}{4}$$

$$2 = \frac{P}{4}$$

$$8 = P$$

$$M = Q + 5$$

$$2 = Q + 5$$

$$-3 = Q$$

$$M = \frac{R}{7}$$

$$2 = \frac{R}{7}$$

$$14 = R$$

Variable R has the greatest value.

- 66. (F)** The total number of desserts ordered is $42 + 23 + 47 + 48 = 160$.

The probability that ice cream was chosen is $\frac{48}{160} = \frac{3}{10} = 30\%$.

- 67. (C)** Set up an inequality to compare the costs:

$$0.15x \leq 10.50$$

$$x \leq 70$$

Therefore, 70 individual sheets of paper would cost \$10.50, so 69 is the greatest number of individual sheets of paper that Macie can buy that would be less expensive than the package.

- 68. (F)** 7:00 p.m. is 6 hours after 1:00 p.m. Calculate the number of degrees the temperature dropped in 6 hours:
 $3 \times 6 = 18$ degrees. Subtract that from the starting point (8 degrees) to find the solution: $8 - 18 = -10$ degrees.

- 69. (D)** The ratio of red to blue to green is 15:7:3. Find the proportion of blue marbles. Add the numbers of the ratio and use the total sum as the denominator:
- $$\frac{7}{15 + 7 + 3} = \frac{7}{25}$$
- Find the proportion of green marbles: $\frac{3}{25}$.

Since there are a total of 75 marbles, the number of blue marbles is $\frac{7}{25} \times 75 = 21$.
The number of green marbles is $\frac{3}{25} \times 75 = 9$.

The number of red marbles is $75 - 21 - 9 = 45$. If 2 blue marbles are removed and replaced with 2 green marbles, the number of blue marbles is now 19 and the number of green marbles is now 11. The ratio of red marbles to green marbles is 45:11.

- 70. (G)** Set up a proportion:

$$\frac{x}{416} = \frac{3}{96}$$

$$96x = 1,248$$

$$x = 13 \text{ bundles}$$

- 71. (C)** Since 18 and 24 are both multiples of 6, find the least common multiple of only 18 and 24.

Multiples of 18: 18, 36, 54, 72...

Multiples of 24: 24, 48, 72...

The least common multiple of 6, 18, and 24 is 72.

- 72. (F)** Let x be the number of dozens of eggs for 300 customers. Set up a proportion:

$$\frac{x}{300} = \frac{15}{200}$$

$$200x = 4500$$

$$x = 22.5 \text{ dozen eggs.}$$

Round up to 23 because you can't purchase half an egg.

- 73. (C)** The total number of bottles of juice in the cooler is $5 + 3 + 6 = 14$.

The number of bottles of juice that are not apple juice (grape juice and orange juice) is $3 + 6 = 9$.

So the probability is $\frac{9}{14}$.

- 74. (H)** The radius of the large plate is 20 cm. Use 20 cm to find the area of the large plate:

$$A = \pi r^2 = \pi(20^2) = 400\pi \text{ sq cm}$$

The circumference of the smaller plate is 20π cm. Use that to find the radius, and then the area, of the smaller plate:

$$C = 2\pi$$

$$20\pi = 2\pi r$$

$$r = 10$$

$$A = \pi r^2 = \pi(10^2) = 100\pi \text{ sq cm}$$

Subtract the area of the small plate from the area of the large plate:

$$400\pi - 100\pi = 300\pi \text{ sq cm}$$

- 75. (D)** The question says that an equal number (x) of each type of page space was purchased. To find the number of each type of page space that was purchased, multiply the price per type by x and set it equal to the total amount spent, then solve for x :

$$200x + 350x + 600x = 11,500$$

$$1,500x = 11,500$$

$$x = 10$$

The store purchased 10 units of each type of page space. To find the total amount of page space purchased, multiply each type of page space by 10, and add:

$$\left(10 \times \frac{1}{4} \text{ page}\right) + \left(10 \times \frac{1}{2} \text{ page}\right) + (10 \times 1 \text{ page}) = 17\frac{1}{2} \text{ pages}$$

- 76. (F)** Solve the inequality for x .

$$3x + 8 \leq 92$$

$$3x \leq 84$$

$$x \leq 28$$

The **positive** odd numbers less than 28 are 1, 3, 5, ..., 25, and 27. There are 14 of them.

- 77. (A)** Substitute 3 for y and solve for x :

$$\frac{36}{y} = 4x$$

$$\frac{36}{3} = 4x$$

$$12 = 4x$$

$$3 = x$$

-
- 78. (H)** Since $\overline{XY} = 20$ cm, use that to find \overline{YZ} :

$$\overline{YZ} = \frac{3}{5}\overline{XY} = \frac{3}{5}(20) = 12 \text{ cm}$$

$$\overline{XZ} = \overline{XY} + \overline{YZ} = 20 + 12 = 32 \text{ cm}$$

-
- 79. (C)** Calculate the cost of the cloth before tax:

$$1\frac{3}{4} \times 8 = \frac{7}{4} \times 8 = \$14$$

Find the tax for \$14 worth of cloth:

$$14 \times 8\% = 14 \times \frac{8}{100} = \$1.12$$

Add the cost of the fabric and the tax:

$$\$14 + \$1.12 = \$15.12$$

- 80. (F)** To find M , subtract $N - M$ and set it equal to the length:

$$1\frac{1}{3} - M = 5\frac{5}{6}$$

$$-M = 5\frac{5}{6} - 1\frac{1}{3}$$

$$-M = 5\frac{5}{6} - 1\frac{2}{6}$$

$$-M = 4\frac{3}{6}$$

$$M = -4\frac{1}{2}$$

-
- 81. (B)** Add the four values in the ratio ($177 + 12 + 7 + 4 = 200$) and use the sum as the denominator. Use that to find the fraction of zinc in one of the coins. Then reduce the fraction:

$$\frac{12}{200} = \frac{3}{50}$$

Multiply this fraction by 8 to find the number of grams of zinc in decimal form:

$$\frac{3}{50} \times 8 = \frac{24}{50} = 0.48 \text{ g}$$

- 82. (G)** Jack scored a mean of 15 points per game in each of the first 3 games, so he earned a total of 45 points for the first 3 games. Use that information to calculate the mean over the four games:

$$\frac{45 + 27}{4} = \frac{72}{4} = 18$$

- 83. (B)** Find the number of liters that need to be added. Since $\frac{1}{3}$ of the oil drum is full, $\frac{2}{3}$ of the drum remains empty:
- $$\frac{2}{3} \times 4,320 = 2,880 \text{ liters.}$$

Use the conversion 1 kL = 1,000 L to find the number of kL: $\frac{2,880}{1,000} = 2.88 \text{ kL}$

- 84. (F)** To find out how old Nicole was 5 years ago, find out how old Nicole and Carmen are now.

Let N = Nicole's age now.

Let C = Carmen's age now.

$$C + 2 = 17$$

$$N = 3C$$

$$N = 3(15) = 45 \text{ (Nicole's age now)}$$

$$N - 5 = 45 - 5 = 40 \text{ (Nicole's age 5 years ago)}$$

- 85. (C)** Let x be the original amount of the chemical. It loses 20% after each week, which means 80% of the chemical remains at the end of each week. End of first week: $0.80x$

At the end of the second week, 80% of the amount left at the end of the first week remains.

End of second week:

$$0.80(0.80x) = 0.64x \text{ or } 64\%$$

- 86. (G)** One more than an odd integer must be even.

One more than $w - 1$ is w , therefore w must be even. Two times an even integer must be even, therefore $2w$ is even. An even integer decreased by 2 must be even.

Therefore, $2w - 2$ must be even.

- 87. (B)** Find the least common multiple of 2, 3, and 4 — which is 12. So, it takes 12 minutes before all three are back at the starting line. Ann completes 1 lap every 2 minutes, so in 12 minutes she has completed 6 laps.

- 88. (F)** $4(7 - 3x) - (5 - x) =$
 $28 - 12x - 5 + x =$
 $23 - 11x$

- 89. (D)** Add the number of students for each category to find out how many total students were in the survey:

$$12 + 16 + 7 + 5 = 40$$

The number of students who had at least 2 pets are the ones who have 2 pets (7) plus the ones who have 3 or more (5).

The total number of students with at least 2 pets is: $7 + 5 = 12$

The probability of a student in the survey having at least two pets is: $\frac{12}{40} = \frac{3}{10}$

- 90. (E)** Let x be the total number of liters the container can hold.

$$\frac{n+10}{x} = 60\% \text{ and } \frac{n+16}{x} = 75\%$$

Solve each equation for x :

Equation 1:

$$\frac{n+10}{x} = \frac{60}{100}$$

$$\frac{n+10}{x} = \frac{3}{5}$$

$$3x = 5(n+10)$$

$$x = \frac{5n+50}{3}$$

Equation 2:

$$\frac{n+16}{x} = \frac{75}{100}$$

$$\frac{n+16}{x} = \frac{3}{4}$$

$$3x = 4(n+16)$$

$$x = \frac{4n+64}{3}$$

Now, set the two equations equal to each other and solve for n .

$$\frac{5n+50}{3} = \frac{4n+64}{3}$$

$$5n+50 = 4n+64$$

$$n+50 = 64$$

$$n = 14 \text{ liters}$$

91. (B) $5x^3 + 3x + 9 + \frac{1}{x^2}$
 $= 5(10^3) + 3(10) + 9 + \frac{1}{10^2}$
 $= 5,000 + 30 + 9 + \frac{1}{100} = 5,039.01$

92. (E) The length of one side of the square is 6 cm. Since R, S, and T are midpoints, then \overline{TM} , \overline{MR} , \overline{RN} , and \overline{NS} are all equal to 3 cm. Triangles TMR and RNS are both right triangles, so the area of one of the triangles is $\frac{1}{2} \times 3 \times 3 = \frac{9}{2}$. The triangles are congruent, so the sum of the areas is $\frac{9}{2} + \frac{9}{2} = 9$ sq cm.

93. (D) Let x be the amount spent on planned expense in one year:

$$\frac{x}{29,600} = \frac{5}{8}$$

$$x = \frac{5}{8}(29,600) = 18,500$$

94. (G) Figure out how many different topping pairs are possible. Use 1, 2, 3, 4, 5, 6, 7 to represent the toppings and create a list of possible pairs:

1,2; 1,3; 1,4; 1,5; 1,6; 1,7
 2,3; 2,4; 2,5; 2,6; 2,7
 3,4; 3,5; 3,6; 3,7
 4,5; 4,6; 4,7
 5,6; 5,7
 6,7

So there are 21 different topping combinations for one pizza.

Since there are 3 pizza sizes, multiply the total number of combinations by 3 to get the total number of different pizzas Cody can create: $3 \times 21 = 63$.

95. (D) To find by what percent the number of families with 1 cat is greater than the number of families with 2 cats, calculate the difference between the two numbers and divide by the number of families with 2 cats:

$$\frac{42 - 35}{35} = \frac{7}{35} = \frac{1}{5} = 0.20 \text{ or } 20\%.$$

- 96. (H)** One side of the square base is 3 ft long. Since the height of the box is 3 times the length, then the height is $3 \times 3 = 9$ ft. The volume of a rectangular prism is length \times height \times width. The volume of the wooden box is:
 $V = 3 \times 3 \times 9 = 81$ cu ft.

- 97. (B)** Calculate each mean speed:

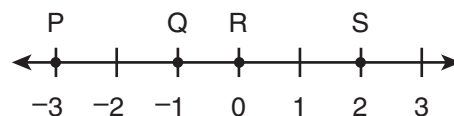
$$R = \frac{65}{5} = 13 \text{ kph}$$

$$S = \frac{72}{4} = 18 \text{ kph}$$

Then calculate the difference of both mean speeds:

$$S - R = 18 - 3 = 5 \text{ kph}$$

- 98. (G)**



Find the midpoint of PQ and RS:

$$\text{Midpoint of PQ} = \frac{-1 - (-3)}{2} = \frac{2}{2} = 1 \text{ unit.}$$

The midpoint of PQ is located 1 unit from each endpoint, so the midpoint is at -2 .

$$\text{Midpoint of RS} = \frac{2 - 0}{2} = \frac{2}{2} = 1 \text{ unit.}$$

The midpoint of RS is located 1 unit from each endpoint, so the midpoint is at 1.

The distance between the two midpoints is $1 - (-2) = 3$ units.

- 99. (D)** If 1 L = 1,000 cu cm, then 1 L = 1,000 mL. Set up a proportion, letting x = the amount of cubic millimeters in 1,000 cubic centimeters.

$$\frac{1,000 \text{ cu mm}}{1 \text{ L}} = \frac{x \text{ cu mm}}{1,000 \text{ cu mm}}$$

Solve for x : 1,000,000 cubic millimeters are in 1,000 cubic centimeters.

- 100. (E)** Both $x + 1$ and $y + 2$ are radii (each is a radius). So, set them equal to each other and solve for y .

$$y + 2 = x + 1$$

$$y = x - 1$$

- 101. (C)** There are 5 sections between M and T. To find the length of one of these sections, find the distance between M and T and divide by 5:

$$\left(\frac{5}{8} - \left(-\frac{1}{4} \right) \right) \div \frac{5}{1} =$$

$$\left(\frac{5}{8} + \frac{2}{8} \right) \div \frac{5}{1} =$$

$$\frac{7}{8} \div \frac{5}{1} = \frac{7}{8} \times \frac{1}{5} = \frac{7}{40}$$

R is 3 sections away from M, so add:

$$-\frac{1}{4} + 3\left(\frac{7}{40} \right) = -\frac{10}{40} + \frac{21}{40} = \frac{11}{40}$$

R is located at $\frac{11}{40}$.

- 102. (H)** Let x be the number of minutes Phan used his internet service in the month. Phan's monthly charges were $18 + 0.024x$. Since Deion's charges were the same as Phan's, set the expression equal to 30 and solve for x :

$$18 + 0.024x = 30$$

$$0.024x = 12$$

$$x = 500$$

Phan used his service for 500 minutes.

- 103. (C)** The height of the triangle is 4 units. The length of the base is $n - m$. So the area is

$$A = \frac{1}{2}(n - m)(4) = 2(n - m).$$

- 104. (E)** $0.06 = \frac{6}{100}$. Simplify the fraction to find the answer

$$\frac{6}{100} = \frac{3}{50} \text{ so, } x = 3.$$

- 105. (B)** Create a chart using the given information and use subtraction to figure out how many cars are not red **and** do not have a back-up camera:

	Red	Not Red	TOTAL
Back-up Camera	4	6 (10-4)	10
No back-up Camera		32 (38-6)	
TOTAL	12	38 (50-12)	50

The probability of selecting a car that meet both conditions from the total of 50 cars at the dealership is:

$$\frac{32}{50} = \frac{16}{25}.$$

106. (F) The total number of cards in the box is $8 + 6 + 5 + 4 + 1 = 24$. Set up a proportion to figure out which card has exactly a 1 in 4 chance of being picked at random. $\frac{x}{24} = \frac{1}{4}$ or $x = 6$. The dog card has a 1 in 4 chance of being randomly selected.

107. (C) Separate the compound inequality into two pieces:

$$2x - 2 \leq y \text{ and } y \leq 4x + 10$$

Substitute $y = 1$ into each inequality and solve for x :

$$2x - 2 \leq 1$$

$$2x \leq 3$$

$$x \leq \frac{3}{2}$$

$$1 \leq 4x + 10$$

$$-9 \leq 4x$$

$$-\frac{9}{4} \leq x$$

The solution is the number line that shows that x is greater than or equal to $-2\frac{1}{4}$ and less than or equal to $1\frac{1}{2}$.

$$\begin{aligned} \mathbf{108. (G)} \quad \frac{14}{21} &= \frac{p}{7} \\ 21p &= 7(14) \\ 21p &= 98 \\ p &= \frac{98}{21} = \frac{14}{3} \end{aligned}$$

109. (A) The total number of balls in the box is $7 + 14 + 21 = 42$.

The probability that the ball is black is $\frac{7}{42} = \frac{1}{6}$.

110. (G) None of the 80 students ($800 - 720$) who answered "no" to Question A ($800 - 720$) could have answered "yes" to both questions. Therefore, the least possible number of students who could have answered "yes" to both questions, can be found by subtracting the 80 who answered "no" to Question A from the 640 who answered "yes" to Question B or $640 - 80 = 560$.

111. (A) Raoul is at least 3 years older than Vahn, which can be written as:

$$r \geq v + 3.$$

Rewrite this inequality to match the answer options:

$$r - v \geq 3$$

- 112. (F)** Since 5.6 ricks and 12.88 dalts are both equal to 1 sind, then 5.6 ricks = 12.88 dalts. To calculate the number of dalts (d) in 1 rick, set up a proportion:

$$\frac{5.6}{12.88} = \frac{1}{d}$$

$$5.6d = 12.88$$

$$d = 2.3$$

- 113. (D)** The shelf, when full, holds 36 cans. When the shelf is half full, it holds 18 cans.

$$x - 4 = 18$$

$$x = 22$$

- 114. (G)** The probability of the cup landing on its side is 72%. Carlos tossed the cup a total of 200 times (50 + 150). The number of times the cup lands on its side is 72% of 200:

$$0.72 \times 200 = 144$$

Answer Key for Sample Form B

1. C	14. G	27. A	40. G	53. C	66. F	79. C	92. E	105. B
2. F	15. A	28. F	41. D	54. H	67. C	80. F	93. D	106. F
3. C	16. G	29. D	42. E	55. B	68. F	81. B	94. G	107. C
4. H	17. A	30. G	43. B	56. G	69. D	82. G	95. D	108. G
5. B	18. G	31. C	44. F	57. A	70. G	83. B	96. H	109. A
6. H	19. B	32. E	45. C	58. 120	71. C	84. F	97. B	110. G
7. C	20. G	33. B	46. E	59. 3	72. F	85. C	98. G	111. A
8. E	21. B	34. F	47. A	60. -3.4	73. C	86. G	99. D	112. F
9. C	22. F	35. D	48. F	61. 300	74. H	87. B	100. E	113. D
10. F	23. D	36. E	49. D	62. 65	75. D	88. F	101. C	114. G
11. B	24. F	37. A	50. F	63. D	76. F	89. D	102. H	
12. H	25. A	38. G	51. D	64. E	77. A	90. E	103. C	
13. B	26. H	39. C	52. G	65. D	78. H	91. B	104. E	