

The New York City Department of Education

2024 Specialized High Schools 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. For example, the date September 21, 2024, would be 9-21-24.

Line 3: Print your birth date, using the numbers of the month, the day, and the year. For example, a birth date of March 1, 2009, would be 3-1-09.

Grid 4: Print the letters of your first name, or as many as will fit, in the boxes. 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. Below each box, fill in the circle that contains the same letter or number as the box. (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.

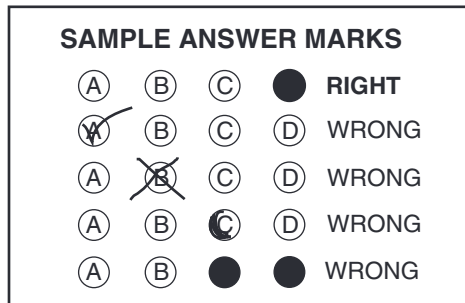
Turn your answer sheet to Side 2 and flip this booklet over to continue with General Directions.

GENERAL DIRECTIONS, continued

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

Marking Your Answers

- Mark each of your answers on the answer sheet in the row of circles matching 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. **Do not make any marks on your answer sheet other than filling in your answer choices.**
- 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.



- 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.**

Planning Your Time

- You have 180 minutes to complete the entire test. **How you divide 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.
- 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 or run out of time.
- 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 you complete the test before the test time (180 minutes) is over, you may go back to review questions in either section.
- Students must stay for the entire test session (180 minutes).

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO



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PART 1 — ENGLISH LANGUAGE ARTS

57 QUESTIONS

REVISING/EDITING

QUESTIONS 1-9 (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 this sentence.

The engineers tried some other things in the hope of finding a more effective insulation for the compartment.

What is the **most** precise revision for the words *The engineers tried some other things*?

- A. The engineers did experiments with several new materials
 - B. The engineers tested foam and fiberglass
 - C. The engineers examined two new materials
 - D. The engineers worked with foam and fiberglass
2. Which sentence contains an error in its construction and should be revised?

(1) Walking dogs, cleaning kennels, hand-feeding newborn kittens, and supporting the pet-adoption process, the animal shelter is looking for volunteers to help with a variety of tasks. (2) Working at the animal shelter is a great way for young people, especially those who aspire to care for and protect animals, to gain valuable work experience. (3) In addition to hands-on training with animal care, volunteers will learn important job skills, such as punctuality, responsibility, and personal initiative. (4) Caring for animals can also help volunteers develop empathy, which is the awareness and understanding of the feelings of others.

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

3. Which edit should be made to correct the sentence?

The Colosseum in Rome, Italy which is considered one of the “new” Seven Wonders of the World, is the largest amphitheater ever built and once could hold up to 50,000 spectators.

- A. Delete the comma after **Rome**.
 - B. Insert a comma after **Italy**.
 - C. Delete the comma after **World**.
 - D. Insert a comma after **built**.
4. Which pair of revisions need 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**.

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.

The Free College Debate

(1) A college degree has become an essential tool in an increasingly competitive job market. (2) Yet the price of higher education, at both private and public universities, continues to rise. (3) Helping students cover the cost of attending college is an important issue.

(4) Many people agree that a college education should be a financially realistic option for those who aspire to obtain a degree. (5) For example, in 2017, the New York State legislature passed a bill creating a program to cover the tuition costs for nearly one million students. (6) The state of Tennessee also has a program that offers all students scholarships and mentoring services if they attend one of the state’s community colleges. (7) Proponents generally believe that these programs are a step in the right direction for making college affordable for students who would have had to take out loans or who would have decided not to pursue higher education at all.

(8) On the other hand, some people oppose bills like the ones in New York and Tennessee because they believe “free” college programs are unsustainable. (9) In order to implement these types of programs, a state pays the college on behalf of the students using funds from the state’s budget, which primarily comes from state taxes. (10) As more students choose to attend college, more funds will be needed to cover the costs. (11) Additionally, many students do not finish college within four years because they switch majors or because they have to work. (12) Critics believe that these circumstances will inevitably lead to an increase in taxes, a decline in the quality of the education offered by the schools, or both. (13) They think narrower college-affordability efforts that target the students who need the most support, such as first-generation college students, may be more effective and viable solutions.

(14) Faculty and students at higher-education institutions can work to keep costs down. (15) In light of increased access to computers, mobile devices, and the Internet, there are more opportunities for students to take courses online, thus reducing the need for and cost of maintaining physical classrooms. (16) Additionally, colleges should account for experience by allowing students to demonstrate their knowledge in order to avoid having to pay to sit through classes on subjects they have already mastered. (17) Similarly, college-bound high school students need to be prepared for college-level work so that they do not have to spend money on remedial classes.

(18) The solutions to the problems associated with rising college costs are not simple. (19) Passing legislation that boosts college affordability will take time, input from experts with different ideas, and careful planning.

5. Which sentence should replace sentence 3 to **best** state the topic of the passage?
- A. Several states have implemented scholarship programs that allow students to attend public universities and community colleges at a very low tuition rate or for free.
 - B. Determining the most effective way to make college affordable is a complex issue, and there are differing opinions about how to approach the problem.
 - C. Higher-education institutions should reduce the cost of a college education by finding ways to help students avoid paying for unnecessary classes and materials.
 - D. The main concern related to the issue of college affordability is that helping students cover tuition could affect the quality of the education they receive.

6. Read this sentence.

Some note that several states have made their community or state colleges low-cost or free for students with limited resources.

Where should the sentence be added to **best** support the ideas in the second paragraph (sentences 4–7)?

- E. at the beginning of the paragraph (before sentence 4)
 - F. between sentences 4 and 5
 - G. between sentences 5 and 6
 - H. between sentences 6 and 7
7. Which sentence presents information that shifts away from the topic of the third paragraph (sentences 8–13) and should be deleted?
- A. sentence 10
 - B. sentence 11
 - C. sentence 12
 - D. sentence 13

8. Which phrase should be added before sentence 14 to **best** transition to the ideas in the fourth paragraph (sentences 14–17)?
- E. Because college affordability is a complicated issue,
 - F. With so many opinions about how to make college affordable,
 - G. Until college becomes more affordable,
 - H. Although some college affordability programs have been successful,
9. Which concluding sentence should be added after sentence 19 to support the topic of the passage?
- A. The increasing use of technology in college classrooms and the financial support from tuition scholarship programs will make colleges more affordable for many students.
 - B. Statewide tuition scholarship programs will make college more affordable for many students, but these programs may lead to new problems.
 - C. Until the problems associated with the rising cost of college are solved, many students will pursue other options after graduating high school.
 - D. When the issue of college affordability is resolved, students will be able to make decisions about pursuing higher education without cost being the deciding factor.

READING COMPREHENSION

QUESTIONS 10–57

DIRECTIONS: Read each of the following six texts and answer the related questions. You may write in your test booklet as needed to take notes. You should 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 ►

Zitkala-Sa (Gertrude Simmons Bonnin) was a Native American writer, musician, teacher, and political activist who was raised on the Yankton Sioux Reservation in South Dakota. In 1900 she published "Impressions of an Indian Childhood" (the term Indian was commonly used at the time to refer to Native American people) to expose readers to what life is like on a reservation.

Excerpt from "Impressions of an Indian Childhood"

by Zitkala-Sa

- 1 Soon after breakfast Mother sometimes began her beadwork. On a bright, clear day, she pulled out the wooden pegs that pinned the skirt of our wigwam¹ to the ground, and rolled the canvas part way up on its frame of slender poles. Then the cool morning breezes swept freely through our dwelling, now and then wafting the perfume of sweet grasses from newly burnt prairie.
- 2 Untying the long tasseled strings that bound a small brown buckskin² bag, my mother spread upon a mat beside her bunches of colored beads, just as an artist arranges the paints upon his palette. On a lapboard she smoothed out a double sheet of soft white buckskin; and drawing from a beaded case that hung on the left of her wide belt a long, narrow blade, she trimmed the buckskin into shape. Often she worked upon small moccasins for her small daughter. Then I became intensely interested in her designing. With a proud, beaming face, I watched her work. In [my] imagination, I saw myself walking in a new pair of snugly fitting moccasins. I felt the envious eyes of my playmates upon the pretty red beads decorating my feet.
- 3 Close beside my mother I sat on a rug, with a scrap of buckskin in one hand and an awl in the other. This was the beginning of my practical observation lessons in the art of beadwork. From a skein³ of finely twisted threads of silvery sinews my mother pulled out a single one. With an awl she pierced the buckskin, and skillfully threaded it with the white sinew. Picking up the tiny beads one by one, she strung them with the point of her thread, always twisting it carefully after every stitch.
- 4 It took many trials before I learned how to knot my sinew thread on the point of my finger, as I saw her do. Then the next difficulty was in keeping my thread stiffly twisted, so that I could easily string my beads upon it. My mother required of me original designs for my lessons in beading. At first I frequently ensnared many a sunny hour into working a long design. Soon I learned from self-inflicted punishment to refrain from drawing complex patterns, for I had to finish whatever I began.
- 5 After some experience I usually drew easy and simple crosses and squares. These were some of the set forms. My original designs were not always symmetrical nor sufficiently characteristic, two faults with which my mother had little patience. The quietness of her oversight made me feel strongly responsible and dependent upon my own judgment. She treated me as a dignified little individual as long as I was on my good behavior; and how humiliated I was when some boldness of mine drew forth a rebuke from her!

¹**wigwam:** hut with an arched framework of poles covered with bark, mats, or animal hides

²**buckskin:** leather made from the skin of a male deer

³**skein:** coiled length of yarn or other thread loosely wound on a reel

- 6 In the choice of colors she left me to my own taste. I was pleased with an outline of yellow upon a background of dark blue, or a combination of red and myrtle-green. There was another of red with a bluish-gray that was more conventionally used. When I became a little familiar with designing and the various pleasing combinations of color, a harder lesson was given me. It was the sewing on, instead of beads, some tinted porcupine quills, moistened and flattened between the nails of the thumb and forefinger. My mother cut off the prickly ends and burned them at once in the centre fire. These sharp points were poisonous, and worked into the flesh wherever they lodged. For this reason, my mother said, I should not do much alone in quills until I was as tall as my cousin Warca-Ziwin.
- 7 Always after these confining lessons I was wild with surplus spirits, and found joyous relief in running loose in the open again. Many a summer afternoon a party of four or five of my playmates roamed over the hills with me. We each carried a light sharpened rod about four feet long, with which we pried up certain sweet roots. When we had eaten all the choice roots we chanced upon, we shouldered our rods and strayed off into patches of a stalky plant under whose yellow blossoms we found little crystal drops of gum. Drop by drop we gathered this nature's rock-candy, until each of us could boast of a lump the size of a small bird's egg. Soon satiated with its woody flavor, we tossed away our gum, to return again to the sweet roots.

From "Impressions of an Indian Childhood" by Zitkala-Sa—Public Domain

A BRIEF HISTORY OF BEADWORK IN SOUTH DAKOTA

Date	Event
1500s	The Dakota use beads made from bones, shells, stones, and animal teeth. European traders bring glass beads to North America.
Late 1600s	The Dakota begin trading with the French in Minnesota.
1830s	The Dakota begin using glass beads in clothing, artwork, and decorations in place of Native-made beads.
1862–1865	The Dakota are expelled from their homelands in Minnesota as a result of the U.S.-Dakota War.
1900s–1920s	The Dakota create items to sell outside their community.

Source: MNopedia

- 10.** In paragraph 1, the phrases “cool morning breezes swept freely” and “wafting the perfume of sweet grasses” affect the tone of the excerpt by suggesting
- E.** the sadness that the author feels reflecting upon her former way of life.
 - F.** the enthusiasm with which the author approached her work indoors.
 - G.** the fond feelings that the author has toward her childhood experiences.
 - H.** the mix of emotions that the author feels toward her work and her mother.
- 11.** The author’s use of sequence in paragraphs 1 and 2 contributes to the development of ideas in the excerpt by
- A.** listing the many steps that are involved in the process of beading in order to explain its difficulty and complexity.
 - B.** conveying the importance of following the steps of the beading process in a precise order to work most efficiently.
 - C.** emphasizing the time required to fully prepare for and execute the many large and small tasks in the activity of beading.
 - D.** detailing each step in preparation for beading in order to highlight the author’s enthusiasm for the work.
- 12.** The phrase “just as an artist arranges the paints upon his palette” in paragraph 2 suggests that
- E.** beadwork is a true form of art.
 - F.** color is a source of artistic inspiration.
 - G.** all artistic activities begin with a series of steps.
 - H.** the beadworker tries to imitate art.
- 13.** The details in paragraph 3 convey a central idea of the excerpt by suggesting that
- A.** the author was interested in the work because she knew her mother was making something for her.
 - B.** the author had difficulty learning through observation but wanted to help her mother.
 - C.** the author was determined to behave according to her mother’s standards and sought her approval.
 - D.** the author had great admiration for her mother’s precision and mastery of her craft.

14. How does the author distinguish her point of view from that of her mother?
- E. by describing their techniques for knotting sinew thread (paragraph 4)
 - F. by describing their approaches to beadwork design (paragraph 5)
 - G. by stating her mother’s instructions on working with quills (paragraph 6)
 - H. by stating her mother’s ideas about activities after lessons (paragraph 7)

15. Read this sentence from paragraph 7.

Always after these confining lessons I was wild with surplus spirits, and found joyous relief in running loose in the open again.

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

- A. It introduces a shift from the author’s demanding relationship with her mother to her more relaxed relationships with friends.
 - B. It signals a change from the challenging aspects of life on the reservation to the advantages of living on the prairie.
 - C. It highlights a contrast between the focus and control required while working and the freedom of having fun outside.
 - D. It concludes the progression of events in the narrative by describing the sequence of events at the end of the author’s day.
16. Which sentence **best** summarizes the process of beading that is described in the excerpt?
- E. Take a buckskin bag full of beads and spread them out on a mat in different colors like a paint palette; take a double sheet of buckskin and smooth it out on a table; take a sinew and awl and thread the beads onto the buckskin in a desired pattern.
 - F. Cut the double sheet of buckskin into a shape; take a skein of sinew and pierce the buckskin with an awl; thread the sinew with beads of many different colors in a simple or complex pattern; twist the sinew to keep it tight after every stitch into the buckskin.
 - G. Arrange the beads into groups of colors on a mat; smooth out a double sheet of buckskin and cut it to shape; take a single thread of sinew; pierce the buckskin with an awl; thread the buckskin with the sinew and string it with beads, carefully twisting after every stitch.
 - H. Gather beads, buckskin, sinew, and awl and place them on a mat; cut the buckskin into the desired shape; decide on a pattern for the beads and create it using the sinews and the awl; thread the beads onto the sinew in the desired pattern and twist it tight.

17. The idea that mastering moccasin design and creation requires experience is **best** illustrated in the excerpt through
- A. the information about the advanced technique of incorporating porcupine quills into a design.
 - B. the descriptions of the special materials that must be used to make decorated moccasins.
 - C. the descriptions of the various color combinations that make an attractive moccasin design.
 - D. the example of the author successfully and independently using a sharpened rod.
18. The table after paragraph 7 expands on a central idea in the excerpt because it shows that
- E. the craft the author was learning was a tradition that endured through many generations and changes.
 - F. the author’s family incorporated traditional materials into their craft as a way of resisting the influence from European traders.
 - G. the uniqueness of the cultural tradition that the author learned as a child was eventually recognized in Europe.
 - H. the author was able to incorporate color into her craftwork as a result of trade with other peoples.

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At Dusk

by Natasha Trethewey

At first I think she is calling a child,
my neighbor, leaning through her doorway
at dusk, street lamps just starting to hum
the backdrop of evening. Then I hear
5 the high-pitched wheedling¹ we send out
to animals who know only sound, not
the meanings of our words—*here here*—
nor how they sometimes fall short.
In another yard, beyond my neighbor's
10 sight, the cat lifts her ears, turns first
toward the voice, then back
to the constellation of fireflies flickering
near her head. It's as if she can't decide
whether to leap over the low hedge,
15 the neat row of flowers, and bound
onto the porch, into the steady circle
of light, or stay where she is: luminous
possibility—all that would keep her
away from home—flitting before her.
20 I listen as my neighbor's voice trails off.
She's given up calling for now, left me
to imagine her inside the house waiting,
perhaps in a chair in front of the TV,
or walking around, doing small tasks;
25 left me to wonder that I too might lift
my voice, sure of someone out there,
send it over the lines stitching here
to there, certain the sounds I make
are enough to call someone home.

"At Dusk" from *NATIVE GUARD* by Natasha Trethewey, published by Houghton Mifflin Company. Copyright © 2006 by Natasha Trethewey. All rights reserved.

¹**wheedling:** speaking in a flattering manner

19. Which lines from the poem **best** support the idea that the neighbor’s efforts to call the cat home directly affect the speaker?
- A. “At first I think she is calling a child, / my neighbor” (lines 1–2)
 - B. “the high-pitched wheedling we send out / to animals who know only sound” (lines 5–6)
 - C. “I listen as my neighbor’s voice trails off. / She’s given up calling for now” (lines 20–21)
 - D. “left me to wonder that I too might lift / my voice, sure of someone out there” (lines 25–26)
20. The isolation of the words “—*here here*—” in line 7 contributes to the meaning of the poem **mainly** by
- E. demonstrating how people try to communicate in familiar ways but are still sometimes misunderstood.
 - F. showing how people can feel desperate to connect with others but give up quickly when their first attempts are ignored.
 - G. using the unspoken bond between the neighbor and her cat to highlight the understanding people have with their pets.
 - H. illustrating the use of a simple expression to call home those who are loved and missed.
21. The details in lines 10–17 about the cat convey a central idea of the poem by
- A. showing that returning home after experiencing independence is challenging.
 - B. suggesting that caring for others means allowing them to grow and to roam freely.
 - C. implying that expecting to feel at home in the natural world leads to disappointment.
 - D. emphasizing the conflicting desires to return to the familiar and to explore the unknown.
22. The phrases “luminous possibility” and “all that would keep her / away from home” (lines 17–19) affect the poem by
- E. highlighting the cat’s lack of concern for the neighbor.
 - F. implying that the speaker finds the cat’s current situation interesting.
 - G. suggesting that the cat is compelled by its sense of wonder to remain outdoors.
 - H. indicating that the speaker supports the cat’s decision to ignore the neighbor.

23. Read lines 11–13 from the poem.

**toward the voice, then back
to the constellation of fireflies flickering
near her head**

Which idea from the poem does the imagery in these lines help convey?

- A. The cat lacks a preference for going in or staying out.
- B. The cat is eager to see what will happen next.
- C. The cat wants to understand the unpredictable behavior of the fireflies.
- D. The cat is fascinated by the natural world and finds the indoors unremarkable.

24. How does the setting affect the events of the poem?

- E. It enables the speaker to regularly overhear the neighbor calling for her cat at dusk.
- F. It allows the speaker to observe the neighbor quietly without interacting with her.
- G. It shows how living in close proximity helps the speaker feel connected to the neighbor.
- H. It shows how feeling isolated causes the speaker to imagine interactions with the neighbor.

25. The poet develops a theme about making connections with others **mainly** through the

- A. exploration of the desires of the speaker and the neighbor.
- B. speaker's observations of the sights and sounds in the neighborhood.
- C. speculations the speaker makes about what the neighbor does inside her house.
- D. speaker's explanation of the cat's thoughts and actions.

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Champion of the Channel

- 1 In 1926 an editor at the *London Daily News* predicted that Gertrude Ederle, an American swimmer with eighteen world records and three Olympic medals, would fail in her attempt to swim across the English Channel. He claimed that “even the most uncompromising champion of the rights and capacities of women must admit that in contests of physical skill, speed and endurance they must remain forever the weaker sex.” Yet, at only nineteen years old, Ederle not only became the first woman to accomplish this feat, she also broke the men’s record by two hours. Gertrude Ederle’s triumphant swim across the English Channel was a testimony to her determination, innovative spirit, and passion for swimming.
- 2 Crossing the English Channel is a daunting task for any swimmer. At its narrowest point, the channel measures twenty-one miles across. Its icy waters hover around sixty degrees Fahrenheit, and its unruly tides and currents toss swimmers about like bobbing corks. Stinging jellyfish, seaweed, and floating debris from shipwrecks and lost cargoes present added hazards.
- 3 For decades the channel’s perils have defeated countless swimmers. Ederle, too, failed in her first attempt to cross the channel in 1925. Just six miles short of finishing, she became ill, and her coach had to haul her out of the water. Undeterred, Ederle decided to try again. Ederle knew that if she did not complete the challenge this time, she might never get the opportunity to set this record, because a rival female swimmer was preparing to make her second attempt at the crossing as well.
- 4 To prepare for the marathon swim, Ederle found ways to improve her equipment. She and her sister Meg discovered that melted candle wax perfectly sealed goggle edges, effectively waterproofing Ederle’s goggles against hammering waves. The sisters also designed a two-piece silk swimsuit for Ederle. During her first channel-crossing attempt she had worn a standard one-piece swimsuit that, after the lengthy hours of swimming across the channel, had stretched out, filling with water and creating drag, making an already challenging task almost insurmountable. Unlike the cumbersome typical bathing suit, this silk invention weighed little and allowed for easy movement.
- 5 On August 6, 1926, Ederle waded into the channel near Cape Gris-Nez, France. At first she shivered in the bone-chilling water even though she had covered her body in eight layers of grease for insulation. Her limbs felt stiff. Her strokes were irregular. Driving forward, she fought to clear her mind and find what she called her “sphere,” a place where the sea became her only companion and the shrieks of gulls and the humming of boat engines faded away. Using a new overhand stroke called the American crawl, Ederle eventually settled into a steady pace, briskly breaking through waves.
- 6 Throughout Ederle’s swim, two tugboats accompanied her. One carried newspaper reporters who wired dispatches of her progress to shore. The other, displaying a sign that read “This way, ole kid!” with an arrow pointing forward, transported her coach, family, and friends. Her coach played songs, such as “Yes, We Have No Bananas,” on a phonograph so that Ederle could time her strokes to the rhythm. Using a net, her coach also passed her baby bottles of broth for nourishment.

- 7 For hours Ederle swam, dodging debris with an amused smile. However, as she neared the English shore, a sudden fierce storm erupted. The tides and waves forced Ederle backward, and she fought the stubborn swells for several hours. The salty water caused her tongue to swell and inflamed her ears. Yet Ederle felt indescribably happy as she churned through the sea. Finally, as she neared the English shore, the storm abated, and the tide turned. No longer fighting against her, the sea pushed her toward the shore and victory.
- 8 After fourteen hours and thirty-one minutes, Ederle, on wobbly legs, stepped onto the English shore. The waiting crowd roared, honked their automobile horns, blasted their tugboat whistles, and set off flares that flashed in the sky. Ederle had swum into history.
- 9 When Ederle returned to New York, she received a parade, where thousands of people shouted "Trudy!" Not only were everyday American citizens proud of Ederle, but also she inspired them to be more active. Over the next few years, more than 60,000 people credited her with motivating them to earn their American Red Cross swimming certificates. Gertrude Ederle's accomplishment proved to the world that with determination and passion, it was possible for a person to achieve his or her goals.

SOLO SWIMS ACROSS THE ENGLISH CHANNEL

Earliest Speed Records		
Year	Swimmer	Time
1875	Matthew Webb (M)	21 hours, 45 minutes
1923	Enrico Tiraboschi (M)	16 hours, 33 minutes
1926	Gertrude Ederle (F)	14 hours, 31 minutes
1926	Arnst Vierkotter (M)	12 hours, 38 minutes
Current Speed Records		
Year	Swimmer	Time
2006	Yveta Hlavacova (F)	7 hours, 25 minutes
2012	Trent Grimsey (M)	6 hours, 55 minutes

26. What do the newspaper editor’s comments in paragraph 1 reveal about the challenges Ederle faced in attempting her feat?

- E. Regardless of her ability, being an American put Ederle at a serious disadvantage over a Londoner, who would be more familiar with the English Channel.
- F. At the time, Ederle still needed more training in order to succeed in the daunting task of swimming the English Channel.
- G. While Ederle could participate in athletic competition, some people were not comfortable with her attempt to swim the channel because no woman had ever attempted it before.
- H. In spite of her previous achievements, Ederle still experienced social as well as physical obstacles in attempting to swim the channel.

27. Read this sentence from paragraph 4.

During her first channel-crossing attempt she had worn a standard one-piece swimsuit that, after the lengthy hours of swimming across the channel, had stretched out, filling with water and creating drag, making an already challenging task almost insurmountable.

The word “insurmountable” is used to highlight

- A. how the bathing suit made it impossible for Ederle to make it across the channel.
- B. how Ederle and her sister decided to improve Ederle’s swimming equipment in a creative way.
- C. that the flaws in Ederle’s bathing suit made a difficult task even more complicated.
- D. that the swimming equipment Ederle used needed to be custom made for her attempt.

28. Which statement describes how the author’s use of a problem-and-solution structure in paragraph 5 contributes to the development of ideas in the passage?

- E. Detailing the challenges presented by the cold channel waters highlights the effectiveness of Ederle’s training.
- F. Describing Ederle’s physical difficulties during her swim provides evidence of the team effort required to ensure her safety.
- G. Explaining the difficulties that arose early in the effort helps predict the additional obstacles that occurred during Ederle’s attempt.
- H. Illustrating Ederle’s process of blocking out her discomfort shows that swimming the channel was both a mental and a physical challenge.

29. Which sentence **best** supports the idea that Ederle succeeded in swimming across the channel because of her innovative approach to the challenge?
- A. "Yet, at only nineteen years old, Ederle not only became the first woman to accomplish this feat, she also broke the men's record by two hours." (paragraph 1)
 - B. "At first she shivered in the bone-chilling water even though she had covered her body in eight layers of grease for insulation." (paragraph 5)
 - C. "Using a new overhand stroke called the American crawl, Ederle eventually settled into a steady pace, briskly breaking through waves." (paragraph 5)
 - D. "The other [tugboat], displaying a sign that read 'This way, ole kid!' with an arrow pointing forward, transported her coach, family, and friends." (paragraph 6)
30. Paragraph 7 contributes to the development of a central idea of the passage by
- E. illustrating that Ederle's physical strength and mental fortitude allowed her to stay focused on her goal.
 - F. conveying that Ederle pushed herself to the edge of her physical capabilities in order to complete the swim.
 - G. highlighting the impact the severe weather had on Ederle's emotions during her swim.
 - H. emphasizing the surge of emotions Ederle felt as she came closer to achieving a personal goal.
31. Which sentence from the passage **best** conveys the author's perspective regarding the impact of Ederle's accomplishment?
- A. "Undeterred, Ederle decided to try again." (paragraph 3)
 - B. "For hours Ederle swam, dodging debris with an amused smile." (paragraph 7)
 - C. "Yet Ederle felt indescribably happy as she churned through the sea." (paragraph 7)
 - D. "Ederle had swum into history." (paragraph 8)

32. Which sentence is the **best** summary of the steps that Ederle took to prepare for her second attempt to swim across the English Channel?
- E. Working with her sister, Ederle waterproofed her goggles using melted candle wax to seal the edges and designed a two-piece silk swimsuit that was lightweight and would not stretch out during the long swim.
 - F. Ederle covered her body in numerous layers of grease for insulation and focused on finding her “sphere” during her swim.
 - G. Ederle began training with her coach, who played music while she swam to help her time her strokes to the music.
 - H. Ederle focused on developing better equipment than the standard bathing suit that proved cumbersome during her first attempt to cross the channel.
33. The idea that many people were interested in Ederle’s attempt to swim the channel is illustrated in the passage **mainly** through the
- A. information about Ederle’s competition with another female swimmer who was also attempting to cross the channel.
 - B. details about the reports of Ederle’s progress during the swim and the celebration of her successful completion of the swim.
 - C. details about how Ederle’s historic swim contributed to an increase in the number of people learning how to swim.
 - D. information about the resources Ederle used throughout her swim to maintain her motivation and stamina.
34. The table builds on the information in the passage **mainly** by
- E. emphasizing that people have continued to swim across the channel and have significantly improved the speed record.
 - F. suggesting that Ederle inspired many women to swim across the channel to attempt to break the current speed record.
 - G. revealing that other women competed with Ederle to set a record time for swimming across the English Channel.
 - H. providing a comparison between the earliest channel-swimming records and the current record times.

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5 Reasons Physical Books Might Be Better Than E-Books

by Shaunacy Ferro

1 Though e-book¹ readers have become a more common sight around town, traditional books still have their evangelists.² According to *The New York Times*, e-book sales have been falling in 2015. Print definitely isn't dead. In fact, according to some research, it may actually be a better choice for some readers. While scientists are still trying to tease out exactly how digital reading affects us differently, here are five ways e-books might be inferior to their dead-tree cousins.

E-books can reduce reading comprehension.

2 In a study of middle schoolers, West Chester University researchers found that students who read on iPads³ had lower reading comprehension than when they read traditional printed books. They discovered that the kids sometimes skipped text in favor of interactive features in the e-books, suggesting that certain multimedia in children's e-books can be detrimental to the practice of reading itself. However, the researchers noted that some interactive features in e-books are designed to enhance comprehension, and that those might be more helpful than game-type interactive graphics.

Young kids can get distracted by e-books.

3 Similar results were found by a small study by the Joan Ganz Cooney Center that consisted of 32 kids reading e-books and print books with their parents. It found that "enhanced" e-books might be distracting. Kids who read enhanced e-books—ones with interactive, multimedia experiences—were more engaged with them physically, but in the end they remembered fewer narrative details than those who read print books or basic e-books.

You remember less about a book's timeline.

4 Another study of adults also found that e-books can be hard to absorb. The researchers asked 25 people to read a 28-page story on a Kindle⁴ and 25 to read the story in paperback, then asked the readers to put 14 events from the story in chronological order. Those who read the story on a Kindle performed worse on the chronology test than the book readers, though they performed about the same as print readers in other tests. Earlier research by the same scholars, from Stavanger University in Norway, found that Norwegian 10th graders also remembered more about texts if they read them in print rather than on a computer screen.

They're not great as textbooks.

5 While e-book textbooks are often cheaper (and easier⁵ to carry) than traditional door-stop⁵ textbooks, college students often don't prefer them. In some surveys of college kids, the majority

¹**e-book:** an electronic book, a publication made available digitally for reading on a computer or other device

²**evangelists:** advocates or supporters

³**iPads:** tablet computers

⁴**Kindle:** device for reading e-books

⁵**door-stop:** a reference to the idea that some textbooks are large and heavy enough to hold a door open

of students have reported preferring print books. However, a 2012 study from the UK’s National Literacy Trust of kids ages 8 to 16 found that more than 50 percent of children reported preferring screen reading.

They’re tiring.

- 6 Staring at a lit screen can be tiring for the eyes and the brain. A 2005 study from Sweden found that reading digitally required a higher cognitive workload than reading on paper. Furthermore, staring at LED⁶ screens at night can disrupt sleep patterns. A 2014 Harvard study found that people who used e-readers with LED screens at night slept worse and were more tired the next day. So, if you’re going to go for an e-book, go for one without the backlight.
- 7 The take-away message? If you’re really trying to absorb material, you might want to go for a physical book. And if you’re going to be up all night studying, turn off the backlight.
- 8 However, all this may not mean that reading on a Kindle is really going to melt your brain. For instance, reading an e-book on a computer is a much different experience than reading on a Kindle, which is specifically designed for consuming books. So, too, is playing with an interactive e-book on an iPad, compared to using a simpler e-book device that only presents the text, with no opportunities to click away into digital distractions.
- 9 And some studies have found that part of the difference between the way people absorb information from e-books versus paper might be due to approaching e-books differently—in one test, participants didn’t regulate their study time with digital books like they did with paper texts, leading to worse performances. It’s possible that our expectations of e-book reading—as well as the different designs of the digital reading experience on a computer or iPad or Kindle—might affect how we approach the text and how much effort we put into studying them. As generations of e-book readers evolve, and people become more accustomed to the idea of sitting down with a digital textbook, these factors could change—for better or for worse.

“5 Reasons Physical Books Might Be Better Than E-Books” by Shaunacy Ferro from MENTAL FLOSS, October 2, 2015. Copyright © 2015 Mental Floss, Inc.

⁶**LED:** Light-emitting diode; LEDs are often used as a backlight for electronic devices such as smart phones and tablets.

35. The details in paragraph 1 convey a central idea of the passage by noting that
- A. fewer people are buying e-books than printed books.
 - B. printed books have some advantages over e-books.
 - C. printed books rely on natural materials more than e-books.
 - D. some people recommend buying printed books over e-books.
36. Which evidence from the passage **best** supports the claim that “print definitely isn’t dead” (paragraph 1)?
- E. Most college students prefer using paper books to using e-books.
 - F. Scientists are still studying the effects of reading on a screen.
 - G. Paper books are less disruptive to sleep patterns than e-books are.
 - H. Reading on a screen can affect both the eyes and the brain.
37. Which sentence from the passage suggests that people in the future will likely choose e-books over print books?
- A. “They discovered that the kids sometimes skipped text in favor of interactive features in the e-books, suggesting that certain multimedia in children’s e-books can be detrimental to the practice of reading itself.” (paragraph 2)
 - B. “However, the researchers noted that some interactive features in e-books are designed to enhance comprehension, and that those might be more helpful than game-type interactive graphics.” (paragraph 2)
 - C. “Kids who read enhanced e-books—ones with interactive, multimedia experiences—were more engaged with them physically, but in the end they remembered fewer narrative details than those who read print books or basic e-books.” (paragraph 3)
 - D. “However, a 2012 study from the UK’s National Literacy Trust of kids ages 8 to 16 found that more than 50 percent of children reported preferring screen reading.” (paragraph 5)

- 38.** How does paragraph 7 fit into the overall structure of the passage?
- E.** It indicates where the author changes the purpose of the writing.
 - F.** It introduces the author’s opinion on the issue.
 - G.** It signals a shift in the position of the author.
 - H.** It begins the author’s commentary on the preceding information.
- 39.** Which sentence from the passage **best** reveals the author’s point of view about e-books?
- A.** “While scientists are still trying to tease out exactly how digital reading affects us differently, here are five ways e-books might be inferior to their dead-tree cousins.” (paragraph 1)
 - B.** “While e-book textbooks are often cheaper (and easier to carry) than traditional door-stop textbooks, college students often don’t prefer them.” (paragraph 5)
 - C.** “For instance, reading an e-book on a computer is a much different experience than reading on a Kindle, which is specifically designed for consuming books.” (paragraph 8)
 - D.** “So, too, is playing with an interactive e-book on an iPad, compared to using a simpler e-book device that only presents the text, with no opportunities to click away into digital distractions.” (paragraph 8)
- 40.** The studies described in paragraph 6 are important to the author’s observations in paragraphs 7 and 8 because the findings
- E.** show that the author has personal opinions to share beyond the ideas included in the studies.
 - F.** give the author the opportunity to reach practical conclusions about reading that are based on scientific evidence.
 - G.** highlight the author’s statement that digital reading experiences vary based on the individual and the device.
 - H.** support the author’s inference that more studies on more types of devices are needed.

41. Which evidence in the passage is **most** relevant to the author’s claim that “our expectations of e-book reading . . . might affect how we approach the text” (paragraph 9)?
- A. Studies found that students used their study time less productively with e-books than with print books.
 - B. A study found that e-books enhanced with multimedia engaged children to interact physically with the e-books.
 - C. Adult readers recalled more details from a story read in a print book than in an e-book.
 - D. One study found that people who read e-books had poor recall of chronological events.
42. What is the **best** summary of the research into the effects of e-book reading?
- E. E-books are disliked by college students and preferred by kids, and their interactive features are distracting.
 - F. Some e-books can aid comprehension, but most e-book readers remember few details.
 - G. E-books reduce reading comprehension and increase distraction, and they are tiring for the eyes and brain.
 - H. Enhanced e-books engage children, but they offer them too many opportunities to be distracted by non-reading activities.

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The narrator's summer job is collecting marine specimens in Puget Sound, Washington. In this excerpt, he is looking for specimens in the mudflats before daybreak. Mudflats, or flats, are coastal landforms created when sediment and silt from tides are deposited as the tides recede.

Excerpt from *The Highest Tide*

by Jim Lynch

- 1 I rounded the oyster beds, to the far side. . . . It was low tide by then, and I saw the water hesitating at its apex, neither leaving nor returning, patiently waiting for the gravitational gears to shift. Dozens of anxious clams started squirting in unison like they did whenever vibrating grains of sand warned them predators were approaching. I stopped and waited with them, to actually see the moment when the tide started returning with its invisible buffet of plankton for the clams, oysters, mussels and other filter feeders. It was right then, ankle deep in the Sound, feet numbing, eyes relaxed, that I saw the nudibranch.¹
- 2 In all my time on the flats I'd never seen one before. I'd read about them, sure. I'd handled them at aquariums but never in the wild, and I'd never even seen a photo of one this stunning. It was just three inches long but with dozens of fluorescent, orange-tipped hornlike plumes jutting from the back of its see-through body that appeared to be lit from within.
- 3 Nudibranchs are often called the butterflies of the sea, but even that understates their dazzle. Almost everything else in the northern Pacific is dressed to blend with pale surroundings. Nudibranchs don't bother, in part because they taste so lousy they don't need camouflage to survive. But also, I decided right then, because their beauty is so startling it earns them a free pass, the same way everyday life brakes for peacocks, parade floats. . . .
- 4 The dark mudflats loomed like wet, flattened dunes stretching deep into Skookumchuck Bay in front of our house. From a distance, they looked too barren to support sea life. Up close, they still did, unless you knew where to find the hearty clams, worms and tiny creatures that flourish in mud. . . . I'm not sure why I decided to take a look. It was still an hour before sunrise, and I knew exactly what the bars² looked like in the moonlight, but for some reason, I couldn't resist.
- 5 I heard it long before I saw it. It was an exhale, a release of sorts, and I instantly wondered if a whale was stranded again. We had a young minke³ stuck out there two summers prior, and it made similar noises until the tide rose high enough for rescuers to help free it. . . . I looked for a hulking silhouette but couldn't find one. I waited, but there were no more sounds. Still, I went toward what I thought I'd heard, avoiding stepping into the mud until I had to. I knew the flats well enough to know I could get stuck just about anywhere. The general rule was you didn't venture out past the shells and gravel with an incoming tide. I sank up to my knees twice, and numbing water filled my boots.

¹**nudibranch:** type of sea slug

²**bars:** sandbars

³**minke:** species of small whale

- 6 . . . I kept stepping toward the one sound I'd heard, a growing part of me hoping I'd find nothing at all. When I stopped to rest and yank up my socks, my headlamp crossed it. My first thought? A giant octopus.
- 7 Puget Sound has some of the biggest octopi in the world. They often balloon to a hundred pounds. Even the great Jacques Cousteau⁴ himself came to study them. But when I saw the long tubular shape of its upper body and the tangle of tentacles below it, I knew it was more than an octopus. I came closer, within fifty feet, close enough to see its large cylindrical siphon⁵ quiver. I couldn't tell if it was making any sounds at that point, because it was impossible to hear anything over the blood in my ears. . . .
- 8 The creature's body came to a triangular point above narrow fins that lay flat on the mud like wings, but it was hard to be sure exactly where it all began or ended, or how long its tentacles truly were, because I was afraid to pry my eyes off its jumble of arms for more than half a second. I didn't know whether I was within reach, and its arms were as big around as my ankle and lined with suckers the size of half-dollars. If they even twitched I would have run. So, I was looking at it and not looking at it while my heart spangled my vision. I saw fragments, pieces, and tried to fuse them in my mind but couldn't be certain of the whole. I knew what it had to be, but I wouldn't allow myself to even think the two words. Then I gradually realized the dark shiny disc in the middle of the rubbery mass was too perfectly round to be mud or a reflection.
- 9 It was too late to smother my scream. Its eye was the size of a hubcap.⁶

From THE HIGHEST TIDE by Jim Lynch. Copyright © 2005 by Jim Lynch. Used by permission of Bloomsbury USA. All rights reserved.

⁴**Jacques Cousteau:** renowned French oceanographer

⁵**siphon:** tube-like organ that is used for drawing in or removing fluids

⁶**hubcap:** removable cap over the end of a wheel axle

43. In paragraph 3, the phrase “the butterflies of the sea” conveys the idea that
- A. nudibranchs do not have to work as hard as other animals to survive in the ocean.
 - B. nudibranchs have colorful features that make them stand out.
 - C. nudibranchs are delicate and have trouble adapting to their environment.
 - D. nudibranchs are rare and difficult to find in the ocean.

44. Read these sentences from paragraph 4.

I'm not sure why I decided to take a look. It was still an hour before sunrise, and I knew exactly what the bars looked like in the moonlight, but for some reason, I couldn't resist.

The sentences contribute to the overall structure of the excerpt by

- E. introducing the mysterious creature that the narrator discovers.
 - F. indicating a shift from the narrator recalling the past to the narrator reflecting on the present.
 - G. establishing a struggle with fear that the narrator must overcome.
 - H. building tension through indicating that the narrator is going to see something unexpected.
45. The narrator's actions in paragraph 5 reveal that he is
- A. expecting to see the familiar sight of a stranded minke.
 - B. confident about exploring farther into the mudflats.
 - C. unconcerned about becoming stuck in the mudflats.
 - D. determined to discover the source of the sound.
46. How does the setting affect the plot of the excerpt?
- E. The darkness of the mudflats before sunrise causes the narrator to pay close attention to his surroundings.
 - F. The rugged terrain of the mudflats makes it more difficult for the narrator to do his job.
 - G. The slow return of the tide along the mudflats forces the narrator to be patient during his journey.
 - H. The barren appearance of the mudflats creates a sense of mystery that unsettles the narrator.
47. Which sentence from paragraph 5 supports the idea that the narrator is taking a risk?
- A. "It was an exhale, a release of sorts, and I instantly wondered if a whale was stranded again."
 - B. "I looked for a hulking silhouette but couldn't find one."
 - C. "I waited, but there were no more sounds."
 - D. "I knew the flats well enough to know I could get stuck just about anywhere."

48. Read this sentence from paragraph 6.

I kept stepping toward the one sound I'd heard, a growing part of me hoping I'd find nothing at all.

How do the narrator's actions develop a central idea of the excerpt?

- E. The narrator's concern about the origin of the noise shows dedication to helping preserve sea life in the mudflats.
- F. The narrator's curiosity about the sea life in the mudflats outweighs any fear about the situation.
- G. The narrator's knowledge about a variety of sea life encourages a search for more specimens to study.
- H. The narrator's eagerness about new specimens of sea life outweighs the reality that the area is an unlikely place to find them.

49. Read these sentences from paragraph 8.

So, I was looking at it and not looking at it while my heart spangled my vision. I saw fragments, pieces, and tried to fuse them in my mind but couldn't be certain of the whole.

The sensory language "spangled my vision," "I saw fragments, pieces," and "tried to fuse them in my mind" conveys the narrator's

- A. extreme excitement about making a great discovery.
- B. reluctant acceptance that he needs to leave the mudflats.
- C. terrified confusion about the creature in the mudflats.
- D. sudden concern about his personal safety.

50. The author develops the narrator's point of view when the narrator sees the creature by

- E. describing the narrator's movements as he approaches the creature.
- F. emphasizing the odds of finding the creature in an area inhabited by a rival species.
- G. showing the narrator's growing realization of the creature's identity.
- H. comparing the size of the creature to the size of a vehicle.

The author of this opinion article attended a symposium, or conference, in Missoula, Montana, at which biologists and other scientists discussed species of plants and animals that are not native to the areas in which they live.

Excerpt from “It’s Time to Stop Thinking That All Non-Native Species Are Evil”

by Emma Marris

- 1 Invasive species are scary. It was ecologist Charles Elton, back in the 1950s, who introduced the militaristic “invasion” metaphor to describe exotic plants and animals—but there’s no question some can be extremely destructive.
- 2 The brown tree snake has eaten a dozen kinds of forest birds in Guam to extinction; zebra mussels clog pipes around the Great Lakes; the common house cat turns out to be, in Australia, a mercilessly effective killer of cute, fluffy marsupials like the bilby and the numbat.
- 3 As scientists have sounded the alarm about these pests, the public has gotten the message. Citizen groups rip out non-native plants. Native gardens have become increasingly popular, both as ways to celebrate the unique flora of each region and as tiny hot spots of diversity. Native trees provide food for native bugs, which feed native birds. Food chains developed over thousands of years of co-evolution unfold in our backyards. . . .
- 4 So we’ve learned, scientists and laypeople alike, that native species are good and non-natives are bad.
- 5 Julian Olden, a biologist at the University of Washington, Seattle, who co-organized the symposium, recently polled nearly 2,000 ecologists. Among his findings: a substantial number of them said they would immediately eradicate a hypothetical non-native forest plant, even if it were shown to have no effect on the forest. Olden calls this the “guilty even when proven innocent” approach.
- 6 That kind of approach is not very useful on a rapidly changing planet.

Exotics Are Everywhere

- 7 Climate change is making it harder even to decide who the invaders are.
- 8 How, scientists at the symposium wondered, do you define “native” on a warming planet, when plants and animals are already moving toward the poles or up mountainsides in search of climate conditions they can tolerate? Should we consider them “invasive” in their new homes? Regardless of what we label them, conservationists will be reluctant to remove them from their new environs—to do so would stymie¹ their chances of adapting to the warmer future we’re creating.
- 9 And then there are the non-natives that we actually like. Most domestic crops are exotic in most of the places they’re grown, but there are even wild exotics that “do good,” forming useful relationships with native species.

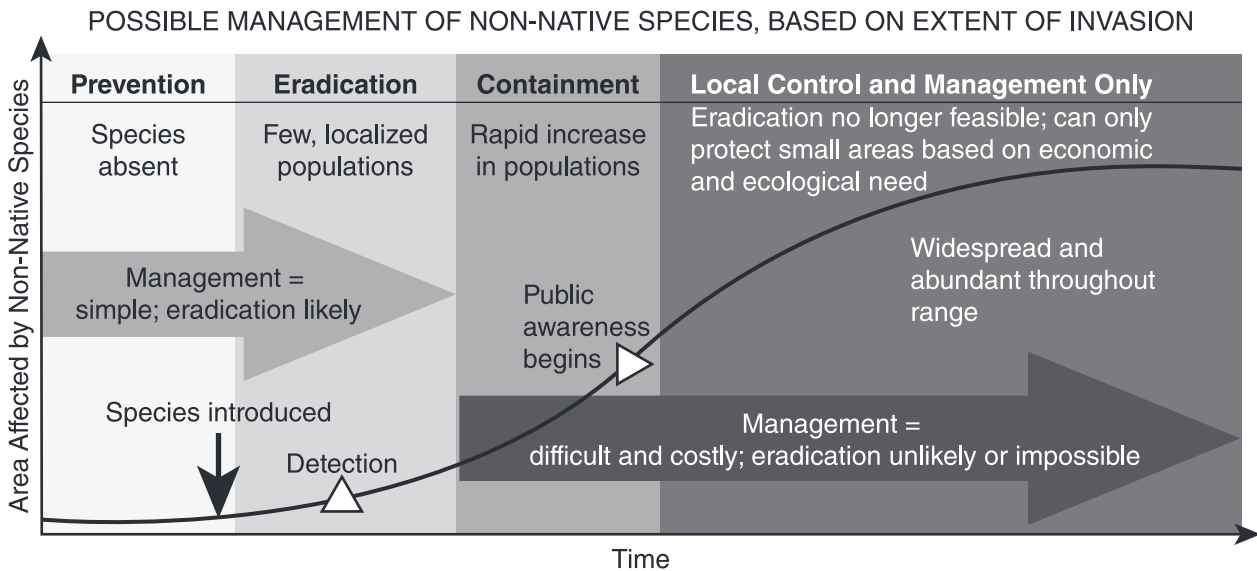
¹**stymie:** hinder or interfere with

- 10 Edwin Grosholz of the University of California, Davis, told the recent symposium about one such relationship. On beaches in his state, non-native spartina grass has become important habitat for the endangered California clapper rail, a plump shorebird with a downward curving bill more at home on land than in the air. A project to rip out and poison the spartina—which grows in dense swaths that exclude many other shorebirds—saw clapper rail numbers go tumbling downward.
- 11 There are other examples like that. The endangered southwestern willow flycatcher nests in “invasive” tamarisk shrubs. Many native (and beautiful) Hawaiian flowers are now pollinated by the Japanese white-eye bird—because the native pollinators have been driven extinct by other non-native species.
- 12 Should we impose further risk on already endangered natives by severing these relationships? Or should we admire the resilience of nature and let such “well-behaved” exotics stay? . . .
- 13 Leave them alone, more and more conservationists are arguing, and stop focusing obsessively on categorizing species as native or non-native. Mark Davis, an ecologist at Macalester College in St. Paul, Minnesota, once considered himself an “invasion biologist”—but not anymore. “I am actively trying to get the field to retire the invader narrative,” he said in Missoula.

A Good Thing, Not the Only Thing

- 14 After all, nativeness is just one environmental value, and arguably not as important as preventing extinctions and preserving biodiversity. In some cases we can best serve biodiversity by leaving the non-natives alone or even—brace yourself, now—introducing them on purpose.
- 15 This is the thinking behind, for example, installing the Aldabra tortoise on the islands of Mauritius. The islands lost their own large tortoises, and the fruiting plants that formerly had their seeds moved around by these fruit-loving reptiles have been on the decline. A tortoise that’s related to the island’s large tortoises—a non-native from the Seychelles in the Indian Ocean that was intentionally introduced in 2004—is now handling some of that work.
- 16 Most of the time, for the time being, conserving species still means focusing on supporting them in their historical habitats, planting natives and removing non-natives. We can and should do that in places where it is feasible and important to us.

From “It’s Time to Stop Thinking That All Non-Native Species Are Evil” by Emma Marris from NATIONAL GEOGRAPHIC MAGAZINE, July 24, 2014. Copyright © 2014 by National Geographic Society.



51. Which sentence from the excerpt supports the conclusion that Elton’s “militaristic ‘invasion’ metaphor” (paragraph 1) has influenced scientific understanding of non-native species?
- A. “Among [Olden’s] findings: a substantial number of them said they would immediately eradicate a hypothetical non-native forest plant, even if it were shown to have no effect on the forest.” (paragraph 5)
 - B. “Regardless of what we label them, conservationists will be reluctant to remove them from their new environs—to do so would stymie their chances of adapting to the warmer future we’re creating.” (paragraph 8)
 - C. “A project to rip out and poison the spartina—which grows in dense swaths that exclude many other shorebirds—saw clapper rail numbers go tumbling downward.” (paragraph 10)
 - D. “In some cases we can best serve biodiversity by leaving the non-natives alone or even—brace yourself, now—introducing them on purpose.” (paragraph 14)
52. Which detail provides the **most** relevant support for the claim that “climate change is making it harder even to decide who the invaders are” (paragraph 7)?
- E. the mention in paragraph 8 of non-native species that are forced to seek new habitats
 - F. the acknowledgment in paragraph 9 that non-native species include many domestic crops
 - G. the description in paragraph 11 of the interactions between native and non-native species
 - H. the account in paragraph 13 of an ecologist who changed his beliefs about non-native species

- 53.** The author’s use of cause and effect in paragraphs 10–11 **mainly** emphasizes the idea that
- A.** some non-native species have helped their environments while others have had harmful impacts.
 - B.** attempts to remove non-native species have seldom produced desired results.
 - C.** some endangered native species have flourished because of the presence of non-native species.
 - D.** interactions between endangered native species and non-native species must be carefully monitored.
- 54.** Which sentence from the excerpt supports the idea that some species are able to adjust to change?
- E.** “Native gardens have become increasingly popular, both as ways to celebrate the unique flora of each region and as tiny hot spots of diversity.” (paragraph 3)
 - F.** “Many native (and beautiful) Hawaiian flowers are now pollinated by the Japanese white-eye bird—because the native pollinators have been driven extinct by other non-native species.” (paragraph 11)
 - G.** “After all, nativeness is just one environmental value, and arguably not as important as preventing extinctions and preserving biodiversity.” (paragraph 14)
 - H.** “The islands lost their own large tortoises, and the fruiting plants that formerly had their seeds moved around by these fruit-loving reptiles have been on the decline.” (paragraph 15)
- 55.** The details in the section “A Good Thing, Not the Only Thing” convey a central idea of the excerpt by suggesting that
- A.** some non-native species can replace native species that are unable to survive on their own.
 - B.** decisions about whether to keep non-native species should be considered on an individual basis.
 - C.** the scientists who study rapidly changing ecosystems agree that non-native species enhance biodiversity.
 - D.** a natural habitat that is healthy should be able to support a blend of native and non-native species.

- 56.** Climate change has affected efforts to manage invasive species **mainly** by causing ecologists to
- E.** call upon the public to be more tolerant of the presence of non-native species.
 - F.** admit that past attempts to eliminate non-native species have damaged the environment.
 - G.** find ways of ensuring that native species are not harmed by the arrival of new species.
 - H.** acknowledge that it is not realistic for some species to remain in their native habitats.
- 57.** How does the chart provide additional support for a central idea of the excerpt?
- A.** by implying that the public becomes aware of non-native species only after removal is impossible
 - B.** by showing that the complete removal of non-native species is usually not achievable after a certain period of time
 - C.** by demonstrating why non-native species can be destructive if they are not removed from an area immediately
 - D.** by explaining how some conservation groups have approached the removal of non-native species

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. Simplify:

$$-3.8 + 2.3 - (-1.1)$$

59. Angle M and angle R are supplementary. The measure of angle R is 5 times the measure of angle M. What is the measure of angle R, in degrees?

60. A juice mixture contains $\frac{3}{16}$ gallon of apple juice and $\frac{3}{40}$ gallon of cranberry juice. How many gallons of apple juice per gallon of cranberry juice does the mixture contain? (Express your answer as a decimal.)

61. Mr. Chan's lawn grows $2\frac{1}{8}$ inches every 2 weeks. He mows his lawn every 2 weeks and cuts off the top $1\frac{3}{4}$ inches of lawn. If Mr. Chan's lawn was 4 inches tall at the beginning of the season, how many inches tall, in decimal form, is Mr. Chan's lawn after 8 weeks?

62.

RESULTS FROM SURVEY OF 110 FAMILIES

Number of Children in the Family	Number of Families
0	45
1	32
2	19
3	8
4	6

The table above shows the number of children in each of 110 families. What is the median number of children in these families?

MULTIPLE CHOICE QUESTIONS

QUESTIONS 63–114

DIRECTIONS: Solve each problem. Select the 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.

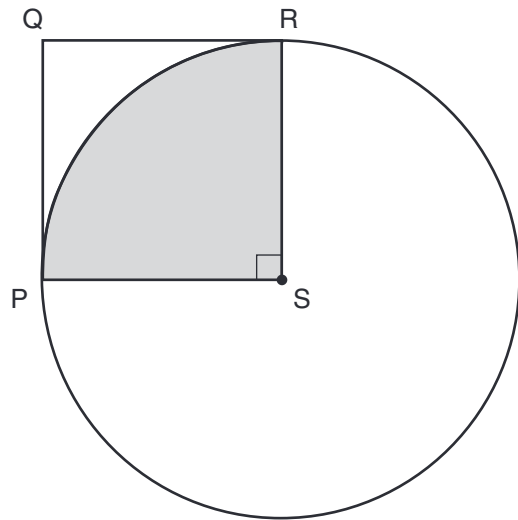
63. Mr. Jones has 550 goats, which is 10% more than Mr. King has. How many **more** goats does Mr. Jones have than Mr. King?

- A. 50
- B. 55
- C. 495
- D. 500

64. If $\frac{2y}{x} - \frac{y}{2x} = \frac{\square}{2x}$ and $x \neq 0$, what expression is represented by \square ?

- E. y
- F. $2y$
- G. $3y$
- H. $4y$

65.



In the figure above, PQRS is a square. Point S is the center of the circle, and points P and R are on the circle. If the area of the square is 4 square centimeters, what is the area, in square centimeters, of the shaded quarter of the circle?

- A. $\frac{\pi}{4}$
- B. π
- C. 2π
- D. 4π

-
- 66.** A list of consecutive integers begins with m and ends with n . If $n - m = 66$, how many integers are in the list?

E. 2
F. 33
G. 66
H. 67

-
- 67.** Simplify:

$$\frac{\left(\frac{39(x-3)}{3}\right) + 39}{13}$$

A. x
B. $x - 2$
C. $13x - 36$
D. $x + \frac{36}{13}$

- 68.** Jar 1 and Jar 2 each contain $\frac{1}{2}$ cup of water. If $\frac{1}{4}$ of the water in Jar 1 is poured into Jar 2, how much water is now in Jar 2?

E. $\frac{1}{8}$ cup
F. $\frac{1}{4}$ cup
G. $\frac{5}{8}$ cup
H. $\frac{3}{4}$ cup

-
- 69.** If n is a whole number, and 0.01 is between $\frac{1}{n}$ and $\frac{1}{n+2}$, what is the value of n ?

A. 0
B. 1
C. 2
D. 99

70. When asked a certain question in a poll, 72% of the people polled answered yes. If 56 people did **not** answer yes to that question, what is the total number of people who were polled?

- E.** 78
- F.** 128
- G.** 144
- H.** 200

71. A museum has a room in the shape of a rectangle. The area of the floor is 960 square feet. In a scale drawing of the museum, 1 inch = 20 feet. If the length of the room is 2 inches in the scale drawing, what is the width of this room in the scale drawing?

- A.** $1\frac{1}{5}$ in.
- B.** $1\frac{1}{4}$ in.
- C.** 24 in.
- D.** 40 in.

72. A program on a computer randomly generates a sequence of whole numbers from 1 to 9, inclusive. If the computer generates a sequence of 300 numbers, what is the best prediction of the number of odd numbers in the sequence?

- E.** 120
- F.** 133
- G.** 150
- H.** 167

73. A truck rental company charges a one-time fee of \$40 plus \$1 per mile driven. Dalia rented a truck and used a coupon for 20% off the total rental cost. After the coupon was applied, she spent a total of \$60. How many miles did she drive?

- A.** 8
- B.** 20
- C.** 32
- D.** 35

-
- 74.** The probability of drawing a red candy at random from a bag of 25 candies is $\frac{2}{5}$. After 5 red candies are removed from the bag, what is the probability of randomly drawing a red candy from the bag?
- E.** 0
- F.** $\frac{1}{10}$
- G.** $\frac{1}{5}$
- H.** $\frac{1}{4}$

-
- 75.** Each number in a sequence is formed by doubling the previous number and then adding 1. If the 9th number in the sequence is 63, what is the 10th number minus the 7th number?
- A.** 96
- B.** 111
- C.** 112
- D.** 127

76.

8.9, 8.2, 8.5, 9.0, 8.4, 8.6, 8.8

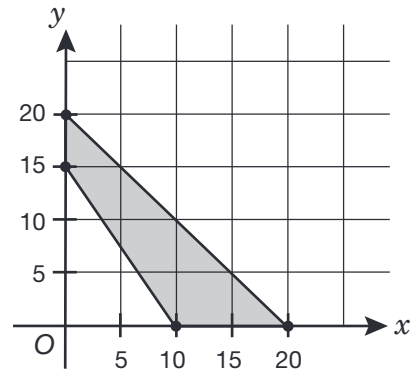
At a skating championship, there are seven judges who each award a score for each skater's performance. The highest and lowest scores given to each skater are discarded, and the mean of the remaining scores is then calculated and reported as the skater's final score. What is the final score for the skater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

- E.** 8.60
- F.** 8.62
- G.** 8.64
- H.** 8.70

77. A piece of wood that is $4\frac{1}{2}$ feet long is cut into 2 pieces of different lengths. The shorter piece has a length of x feet. Which inequality expresses all possible values of x ?

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

78.



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

- E. 75
- F. 125
- G. 150
- H. 200

79.

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

Yesterday in Centerville, the highest Fahrenheit temperature, F , was 86° , and the lowest was 68° . What was the difference between these temperatures, in degrees Celsius, C ?

- A. 10.0° C
- B. 15.0° C
- C. 20.0° C
- D. 32.4° C

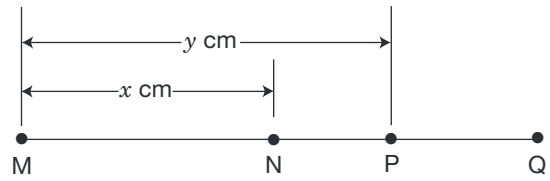
80. Let x be an odd number. In terms of x , what is the sum of the two even numbers closest to x ?

- E. x
- F. $2x$
- G. $2x - 2$
- H. $2x - 4$

81. In 1991, the total public debt of the United States was about \$3,600,000,000,000. In that year, there were about 250,000,000 people in the United States. Which amount is the best estimate of the public debt per person for that year?

- A. \$1,440
- B. \$14,400
- C. \$144,000
- D. \$14,400,000,000

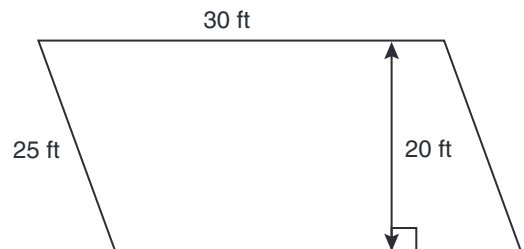
82.



In the figure above, N is the midpoint of \overline{MQ} . Which segment has length $(2x - y)$ centimeters?

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

83.



What is the area of the parallelogram shown above?

- A. 750 sq ft
- B. 600 sq ft
- C. 500 sq ft
- D. 300 sq ft

84. On Wednesday, a baker produced 100 more loaves of bread than were produced on Tuesday. On Thursday, the baker produced 50 fewer loaves than were produced on Tuesday. If the total number of loaves produced on all three days was 230, how many loaves were produced on Wednesday?

- E.** 60
- F.** 80
- G.** 120
- H.** 160

85.

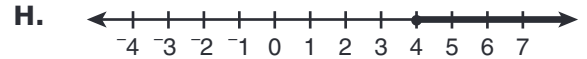
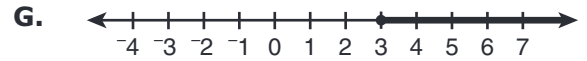
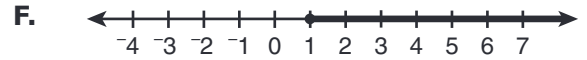
QUIZ SCORES IN
MRS. ARCH'S CLASS

Quiz Score	Number of Students
60	9
70	7
80	4
90	5
100	3

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

- A.** 60
- B.** 70
- C.** 75
- D.** 80

86. Which graph represents the solution to the inequality $x + 4 \geq 3$?



87. The reciprocal of $\frac{1}{4}$ is added to the reciprocal of 3. What is the reciprocal of this sum?

- A.** $\frac{3}{13}$
- B.** $\frac{3}{4}$
- C.** $\frac{4}{5}$
- D.** $\frac{13}{4}$

88. Nura made a square poster with a side length of 13 inches. Latrice made a square poster with a side length of 15 inches. What is the difference, in square inches, between the area of Latrice’s poster and the area of Nura’s poster?

- E.** 56
- F.** 8
- G.** 4
- H.** 2

89.

INGREDIENTS FOR
4 SERVINGS
OF OATMEAL

Ingredient	Cups
Oats	$\frac{2}{3}$
Water	$3\frac{1}{4}$

The table shows the cups of ingredients used to make 4 servings of oatmeal. What is the unit rate for cups of oats per cup of water?

- A.** $\frac{1}{6}$
- B.** $\frac{8}{39}$
- C.** $\frac{13}{16}$
- D.** $\frac{13}{8}$

90. If $\left(\frac{3}{5} - \frac{1}{2}\right)x = \frac{1}{4} + \frac{2}{3}$, what is the value of x ?

E. $\frac{11}{120}$

F. $\frac{2}{7}$

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

H. $\frac{55}{6}$

91. In a certain state, the sales tax rate increased from 7.0% to 7.5%. What was the increase in the sales tax on a \$200 item?

- A. \$1
- B. \$10
- C. \$14
- D. \$15

92. Evaluate:

$$\left|(-8) - 12 + (-17) - (-31)\right| - |24|$$

E. -30

F. -18

G. 18

H. 44

93.

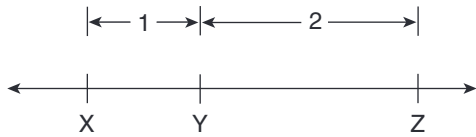
CELL PHONE SALES BY COLOR

Color	Percentage of Cell Phones Sold
White	$8k$
Black	30
Blue	$30 - 2k$
Red	$k + 5$
Total	100

The table above shows cell phone sales by color. What percentage of the cell phones sold were blue?

- A. 18%
- B. 20%
- C. 22%
- D. 28%

94.



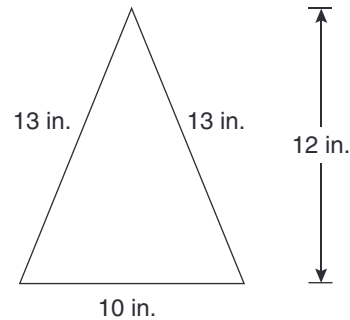
On the number line above, the distance between X and Y is 1 unit, and the distance between Y and Z is 2 units. What is the distance, in units, between Y and the midpoint of X and Z?

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

95. By what percent did the price of a cup of coffee increase if its price was increased from \$1.25 to \$1.35?

- A. 7%
- B. 8%
- C. 10%
- D. 12%

96.



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

- E. 280
- F. 295
- G. 340
- H. 360

97. The price of a sandwich was raised from \$6.25 to \$6.75. What was the percent increase in the price?

- A. 5%
- B. 8%
- C. 7%
- D. 50%

98. Terrell played 5 computer games and earned a mean score of 8 points per game. If his mean score for the first 4 games was 7 points per game, how many points was his score in the fifth game?

- E.** 9
- F.** 11
- G.** 12
- H.** 14

99. Lian bought enough oranges to fill 4 bags. Each bag contains 8 oranges. The total cost was \$11.52. At that rate, how much would Lian pay for 42 oranges?

- A.** \$17.28
- B.** \$15.12
- C.** \$15.02
- D.** \$12.52

100. $3.6 \div 0.018 =$

- E.** 0.005
- F.** 0.648
- G.** 20
- H.** 200

101. A tank with a 500-gallon capacity currently contains 75 gallons of water. Additional water is poured into this tank at a rate of 5 gallons per minute. After 45 minutes of adding water, what percentage of the tank's total capacity will be filled? (Assume that there is no loss of water from the tank.)

- A.** 45%
- B.** 55%
- C.** 60%
- D.** 70%

102. Misha wants to use ribbon to make 2 straps for a backpack. The ribbon costs \$5.00 a yard. If each strap requires $1\frac{1}{4}$ yards of ribbon, how much will Misha pay for the ribbon (not including tax)?

- E.** \$4.00
- F.** \$6.25
- G.** \$11.25
- H.** \$12.50

-
- 103.** A graph shows the proportional relationship between the number of test questions a student gets correct, x , and the student's test score, y . The ordered pair $\left(1, \frac{5}{4}\right)$ is on the graph. What does the y -coordinate of the ordered pair represent in this relationship?
- A.** The test will last $1\frac{1}{4}$ hours.
 - B.** Each test question is worth $1\frac{1}{4}$ points.
 - C.** An average student can answer 5 questions in 4 minutes.
 - D.** A student who answers 5 questions correctly will earn 4 points.

- 104.** In a survey of 200 adults in the town of Waskegon, 45 reported reading the online version of the *Waskegon Bulletin* the previous day. If 25,000 adults live in Waskegon, which number is the best estimate of the number of adults who read the online version of the *Waskegon Bulletin* the previous day?
- E.** 5,600
 - F.** 9,000
 - G.** 11,300
 - H.** 24,800

-
- 105.** A hiker plans on hiking 17 miles in 3 days. Which equation describes the relationship between the number of days hiked, x , and the number of miles traveled, y ?
- A.** $y = \frac{3}{17}x$
 - B.** $y = 3x$
 - C.** $y = \frac{17}{3}x$
 - D.** $y = 17x$

106. Carolyn walked 3 miles from her house to the library and then $2\frac{1}{2}$ miles farther to the grocery store. Returning home by the same route, she walked $1\frac{2}{3}$ miles before stopping at a friend's house. How many miles did Carolyn have left to walk home?

E. $3\frac{5}{6}$

F. $4\frac{1}{6}$

G. $4\frac{2}{3}$

H. $7\frac{1}{6}$

107. A child grows $1\frac{1}{4}$ inches in $\frac{1}{3}$ of a year. What would be his yearly growth rate in inches per year?

A. $\frac{5}{12}$

B. $3\frac{1}{4}$

C. $3\frac{3}{4}$

D. $4\frac{1}{4}$

108. $3(0.01) - 3(0.1) =$

E. -0.33

F. -0.27

G. 0

H. 0.33

109. What is the value of

$$10\frac{1}{2} + \left(-5\frac{1}{3}\right) - \left(-2\frac{3}{4}\right)?$$

A. $2\frac{5}{12}$

B. $7\frac{11}{12}$

C. $13\frac{1}{12}$

D. $18\frac{7}{12}$

110. Carlos has \$350 in a savings account that earns 5% simple interest each year. How much will he have in the account after 1 year, if there is no money withdrawn?

- E.** \$17.50
- F.** \$175.00
- G.** \$367.50
- H.** \$525.00

111. The probability of an event occurring is 0.05. What is the chance that the event will occur?

- A.** likely
- B.** unlikely
- C.** impossible
- D.** neither likely nor unlikely

112. The table below shows the number of cups of red paint and blue paint used to make a purple paint mixture.

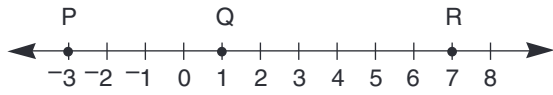
PURPLE PAINT

Cups of Red Paint	Cups of Blue Paint
1	1.5
4	6
11	y

Based on the relationship between the number of cups of red paint and the number of cups of blue paint, what is the value of y ?

- E.** 10.5
- F.** 13
- G.** 16.5
- H.** 24

113.



On the number line above, what is the distance, in units, between the midpoint of \overline{PQ} and the midpoint of \overline{QR} ?

- A. 3
- B. 4
- C. 5
- D. 6

114. An ice cream shop sells 16 cups of ice cream for \$48 and 4 cups for \$12. There is a proportional relationship between the number of cups of ice cream and the cost. What is the constant of proportionality for this relationship?

- E. 3 cups per dollar
- F. 3 dollars per cup
- G. 4 cups per dollar
- H. 4 dollars per cup

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. ■