

Test Prep Sample

ENGLISH TEST

PASSAGE I**The Changing Sounds of Music**

The landscape of post–World War II

America was significantly different from the country that had entered the war in the early 1940s.

The preceding decade witnessed economic depression, drought, and political divisiveness. By the late 1940s, the American economy was prospering, and war-weary citizens were ready to celebrate.

Young people turned to dance halls to enjoy live music and socialize. At that time, however, pop music did not exist the way it does today, with various sub-genres and trends. People danced to songs performed by large orchestras or country music bands. In both instances, the guitar was a back-up instrument, filling out the lush sounds of



the larger band because an acoustic guitar simply
was not loud enough to carry a melody on its own. **1**

By the early 1950s, musicians and
electricians experimented with various methods of
amplifying a guitar. Because of the shape and
nature of a guitar, placing a microphone on the
hollow instrument was not sufficient to create the
range of sounds or the volume musicians desired.
Guitarist Les Paul is commonly credited with
inventing the electric guitar, and like many
scientific and cultural advancements, his invention
came about through much trial and error,
collaboration, and competition. Paul discovered that
a solid rather than, a hollow instrument, created less
2
feedback when electrified.

The first mass-produced electric guitars
were created by Leo Fender and ultimately changed
the face of popular music. For the first time, guitars
were accessible to accomplished musicians as well
as interested learners, and they were able to lead a
3
band. By bringing a loud, luxurious sound to the
forefront, songwriters could create music for

1. In the preceding sentence, the writer is considering deleting the clause “to carry a melody on its own” and ending the sentence with a period. Should the writer make this deletion?

- A. Yes, because the clause is not needed to convey the idea that the guitar was not as loud as the other instruments in a large band.
- B. Yes, because the clause shifts the focus of the paragraph from the sounds of the instruments in a band to the characteristics of the songs played by a band.
- C. No, because the clause helps to explain why the guitar was not used as a lead instrument in large bands.
- D. No, because the clause provides information that foreshadows how the guitar would eventually be used in small bands.

2. F. NO CHANGE

- G. solid, rather than, a hollow instrument
- H. solid, rather than a hollow instrument,
- J. solid, rather than a hollow, instrument

3. A. NO CHANGE

- B. learners and
- C. learners because they
- D. learners: they

GO ON TO THE NEXT PAGE.



smaller bands rather than full-sized orchestras. The addition of amplification and electronic sounds gave American artists a myriad of new avenues to develop in their music. As those songs traveled the world through recordings, radio, and touring artists, other musicians were likewise inspired. Because art begets art, every musician influenced and altered the music in a slightly different way, eventually leading to modern pop music, which offers the world countless genres and styles.

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4. F. NO CHANGE**G. countless styles****H. a large number of styles and genres too numerous to count****J. numerous genres and many different styles**

MATHEMATICS TEST

1. Let $k = i$, let $l = \sqrt[3]{2}$, and let n be a positive integer. For what values of n is $(kl)^n$ a whole number?

A. For any n divisible by 2
 B. For any n divisible by 3
 C. For any n divisible by 4
 D. For any n divisible by 6
 E. For any n divisible by 12

2. Zoey hires a carpenter and a painter to work on her house. The carpenter charges \$65 per hour and a materials fee of \$200. The painter charges \$50 per hour and a booking fee of \$10. The carpenter and the painter work for the same number of hours, but the total amount that Zoey pays the carpenter is three times the total amount that she pays the painter. How many hours does the carpenter work on Zoey's house?

F. 2
 G. 3
 H. 4
 J. 6
 K. 13

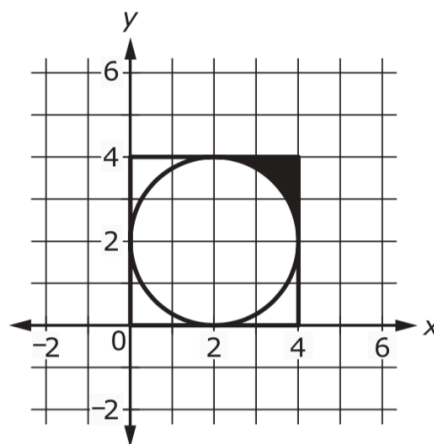
3. The piecewise function $f(x)$ is defined as

$$f(x) = \begin{cases} 2(x-5) & 5 \leq |x| < \infty \\ x^2 + 3x + 1 & 3 < |x| < 5 \\ 6x & 0 \leq |x| \leq 3 \end{cases}$$

What is the value of $f(-5)$?

A. -30
 B. -20
 C. 0
 D. 11
 E. 30

4. A square and a circle lie in the xy -plane as shown. What is the exact area of the shaded region?



F. $16 - 16\pi$ square units
 G. $4 - 4\pi$ square units
 H. $4 - \pi$ square units
 J. $16 - 4\pi$ square units
 K. $4 + \pi$ square units

5. A basket contains green, red, yellow, and blue folded pieces of paper. There is a 20% chance that a randomly selected piece of paper is green, a 35% chance that a randomly selected piece of paper is red, and a 5% chance that a randomly selected piece of paper is yellow. If there are 16 blue pieces of paper, what is the average number of pieces of paper of each color in the basket to the nearest whole number?

A. 4
 B. 8
 C. 10
 D. 16
 E. 25



6. An isosceles triangle ABC is in the xy -plane with its base parallel to the x -axis. The triangle has an area of 6 square units and a height of 2 units. The apex of the triangle is located at point B and has coordinates $(5,1)$. If the slope of the line segment connecting point A to the apex is positive, what are the coordinates of point A?
- F.** $(-1,-1)$
G. $(2,-1)$
H. $(3,-2)$
J. $(3,-0.5)$
K. $(3.5,-1)$



READING TEST

Passage I

LITERARY NARRATIVE: This narrative is loosely based on the life of Karen Keskulla Uhlenbeck, winner of the 2019 Abel Prize.

(1) Although she knew she would have to give a speech up on the dais, when Ann heard her name echo through the hall, she felt an otherworldly sense of being amongst the clouds. Her cogent (5) mind was one that could create visuals with ease, breaking down vast theoretical models into digestible flowcharts, yet it couldn't wrap itself around this moment. Winning a lifetime achievement award for her work that combined (10) physics, geometry, and analysis was something she never anticipated. To have to give a speech when accepting that award was a scenario that filled her with dread, yet she still rose to her feet and took the long walk through (15) the seated guests up to the stage.

A voice in her head whispered about the old stereotype that mathematicians are not great speakers and therefore study science instead of linguistics. Ann knew, however, that it generally (20) wasn't true; she knew as many physicists who were as gifted at crafting phrases as they were at devising convoluted, sprawling theories. But she was not a great conversationalist; Ann had a tendency to answer questions that weren't being (25) asked (if those being asked were not, in her opinion, the correct questions). This made for stimulating, intensely philosophical debates in the mathematics lab and in her classroom of like-minded students. In the so-called "real world," (30) however, she was often accused of putting

her conversational partners through a gauntlet of verbal acrobatics. Her probing questions and quirky insight performed cartwheels and backflips around small talk. (3) As Ann was more (35) compatible with scientists, this audience filled with people from all walks of life (artists, philanthropists, and even a sports star or two) made her extremely nervous.

Mindfulness helped ground her when her (40) mind sped off in scientific revelry, so Ann focused on her breath and her tapping feet against the marble floor as she weaved through the tables and chairs. Yet the memories flashed, welling up in her mind and then bursting like bubbles.

(45) Bubbles...an area of expertise in her studies. After acquiring substantial amounts of data, she ascertained that bubbles arranged themselves into shapes to conserve their energy—something the teenage version of herself puzzled (50) about as she washed the family dishes had far-ranging implications in mathematical theory. Imagine the joy she felt now, watching the bubbles cling to the edge of the sink.

Another memory floated up: her, at twelve, (55) reading every book in the library about science, and being incensed when she had no more to read. She had petitioned the library to obtain more tomes dedicated to difficult subject





matter, and, impressed by her initiative, the (60) librarian had agreed.

Yet another bubble: a math class, the most advanced offered in the eleventh grade. Performing well on the final test meant one could attend a college course instead of biding time in (65) the halls of high school. After studying for weeks, she earned the highest score in the class, setting the curve and, best of all, earning a spot in the college course. The other students—particularly the boys—groaned when it was (70) revealed that she took the top grade. They called her “curve killer,” and although she remained quiet, internally she shined.

Ascending the steps, less jubilant memories popped. Staying late in the math lab, (75) trying to construct a more elegant model, a more exacting equation; foregoing time with friends, surrendering sleep, never just reclining on the couch and snacking on pretzels. Handful after handful of pretzels in the lab, instead of a proper (80) dinner. Sacrificing a foreign teaching position, adventure in a far-off land, to stay and finish the research.

Then, the memories became joyful again. The electrifying feeling of collaboration, (85) constantly challenging herself and her fellow mathematicians. The dizzying sense of working well into the wee hours of the morning, then finally exiting the lab, blinking her eyes, and realizing that she was in that liminal space when (90) the stars were beginning to fade and the sun was starting to rise.

Finally, she arrived at the microphone. As she adjusted it to her height, a final bubble popped: were her thoughts an indiscriminate (95) assortment of memories, or did each of these reminiscences signify events that culminated in this moment? In her work, Ann believed that

things stacked in a logical order (even if the order was occasionally inscrutable), but whether her life (100) stacked up in the same way wasn’t as clear. It was yet another liminal space she wasn’t expecting. Sweeping away these musings, she held onto the microphone and began to speak.

1. The point of view from which the passage is told can best be described as that of:
 - A. a mathematician looking back on the years of her life, reflecting on how the obstacles she faced as child prepared her for this moment.
 - B. an omniscient narrator describing the events of a woman’s life as they happen, starting from her early education and continuing into her career as a mathematician.
 - C. an unidentified narrator describing the thoughts and experiences of a shy mathematician as she prepares to address an audience unlike herself.
 - D. an unbiased journalist who is writing a biography about a well-known mathematician who has the ability to explain abstract theories using comprehensible language.
2. It can reasonably be inferred from the passage that Ann combats her fear of speaking in front of an audience by:
 - F. thinking of her sacrifices and scientific discoveries as bubbles in a sink.
 - G. reflecting on her collaborative effort with others to achieve her goals.
 - H. allowing memories of her teachers, classmates, and former librarian to calm her.
 - J. focusing her mind on her breathing and the sound of her feet tapping on the floor.



3. Which of the following statements regarding Ann's feelings about her fellow high school students is supported by the passage?
- A. Their resentment of her achievements did not affect her determination to succeed.
 - B. Her studies kept her busy, so she did not have time to form attachments to them.
 - C. She turned their dislike of her into motivation to do better in her studies.
 - D. The stiff competition provided by the other advanced students caused her to work even harder to remain at the top of her class.
4. The passage indicates that during Ann's walk to the stage, she comes to the understanding that:
- F. she will always find a way to challenge herself.
 - G. real life is not as clean and predictable as her work.
 - H. every moment in life leads to an expected outcome.
 - J. her memories do not always reflect what actually happened.



SCIENCE TEST

Calculators are NOT allowed to be used on this test.

Passage I

Pollinators such as honeybees, butterflies, and bats are crucial to the success of wild plants and crops alike. Insect pollinators are especially important to fruits and vegetables. However, honeybee populations are on the decline, with colony losses observed globally. Many factors contribute to this loss, including lack of resource availability. Increasing flower diversity in honeybee habitats has been recommended as a way to conserve their populations. Honeybees depend on nectar and pollen from flowers for survival, growth, and development. Nectar provides energy and is used to produce honey, while pollen is their source of fat and protein. Adult honeybees consume nectar, honey, and pollen, while they mix pollen and nectar to feed their young. They also store honey and pollen in the cells of their hives. Both nectar and pollen differ from flower to flower in type and concentration of sugar and in protein composition.

A team of scientists studied plant DNA contained in honey that was harvested from targeted hives to determine the sources from which honeybees were collecting nectar and pollen. Because honey contains trace amounts of pollen, it records both nectar and pollen sources for a hive.

This study took place at the National Botanic Garden of Wales, home to more than 8,000 flowering plant taxa. The table shows the top 15 contributors to honeybee diet in the study area.

Plant	Proportion of Identified Plants	Growth
Willow	28.7%	Native woodland
Closely related rose taxa	19.0%	Native woodland and garden
Stone fruit	12.5%	Native woodland and garden
Gorse	8.7%	Native woodland
Maple	8.1%	Native woodland and garden
Hellebore	5.8%	Native grassland and garden
Dandelion	4.1%	Native grassland
Holly	4.1%	Native woodland
Oak	3.5%	Native woodland
Bluebell	1.7%	Native woodland and grassland
Ash	0.8%	Native woodland
Peony	0.5%	Garden
Camas lily	0.4%	Garden
Grape hyacinth	0.3%	Garden
Elderberry	0.2%	Native woodland and garden



1. Which statement from the passage supports why the honeybees forage from different species of plants?
 - A. Increasing flower diversity in honeybee habitats has been recommended as a way to conserve their populations.
 - B. Honeybees depend on nectar and pollen from flowers for survival, growth, and development.
 - C. Nectar provides energy and is used to produce honey, while pollen is their source of fat and protein.
 - D. Both nectar and pollen differ from flower to flower in type and concentration of sugar and in protein composition.
2. Which claim is clearly supported by the data?
 - F. Growing native plants results in greater honey production.
 - G. Growing a large diversity of plants results in greater honey production.
 - H. Bees prefer to forage from native plants when offered a large diversity from which to forage.
 - J. Bees prefer to forage from a single variety of plant rather than to have a diversity from which to forage.
3. Which of the native grasslands plants makes a greater contribution than any other to the diet of the studied honeybees?
 - A. Peony
 - B. Willow
 - C. Hellebore
 - D. Dandelion
4. Consider the following claim:

Honeybees collect more nectar and pollen from native woodland plants than from native grassland plants.

Which of the following observations from the study best supports this claim?

 - F. Willow provides more nectar and pollen than any other plants.
 - G. Hellebore, dandelion, and bluebell provide less pollen combined than willow alone.
 - H. There are ten native woodland plants on the list but only three native woodland plants.
 - J. Peony, camas lily, and grape hyacinth provide less pollen combined than dandelion alone.





Writing Test

Teaching Life Skills

Life skills are tools that help people deal with the challenges of life. At present, life skills are not taught in most high schools but instead are taught by one's family or gained through life experience. Some people think it would be beneficial to offer a high school curriculum that consists of instruction on personal finance, stress management, and interpersonal skills. However, others argue that life skills are a family matter influenced by personal beliefs and values and are best acquired within the home and through hands-on experience. Should life skills be taught in high schools?

Read and evaluate these perspectives. Each implies a particular way of thinking about teaching life skills in high schools.

Perspective One

Teaching life skills in high school would increase a graduate's chance of personal success. Equipping students with the tools they need to tackle the daily challenges of life would better prepare them for adulthood.

Perspective Two

Teaching life skills in high school would improve society. Teaching students to make good financial and life choices would pay off for society in the long run. The world would be a better place if young people were better equipped to make a positive contribution to society.

Perspective Three

Life skills should be taught at home and not in high school. The way in which people think about finances and relationships is greatly influenced by personal values. Teaching life skills in high school would be an intrusion.

Writing Task

Write a unified, coherent essay about whether high schools should offer life skills classes. Be sure to:

- clearly state your own perspective on the issue and the relationship between your perspective and at least one other perspective
- develop and support your ideas with reasoning and examples
- organize your ideas clearly and logically
- communicate your ideas effectively in standard written English

Your perspective may be in full agreement with any of those given, in partial agreement, or completely different.



Planning Your Writing

The following questions may be helpful to you as you plan your writing.

Strengths and weaknesses of different perspectives on the issue

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

Your own knowledge, experience, and values

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



Answer Key

English

1.

- A. This choice may be tempting because the sentence already states that the guitar was “simply not loud enough,” but it is incorrect because the clause conveys what the guitar was “not loud enough” to do: carry the melody and, therefore, be the lead instrument.
- B. This choice may be tempting because a “melody” is a characteristic of a song, not of an instrument, but it is incorrect because the guitar’s ability to carry a melody, not the melody itself, is the focus of the sentence.
- C. Correct. The clause is needed to explain why the guitar was a “back-up instrument” and not a lead instrument.
- D. This choice may be tempting because the rest of the passage discusses the guitar’s role as a lead instrument in smaller bands, but it is incorrect because this sentence relates only to the use of the guitar as a “back-up instrument” in large bands.

2.

- F. This choice may be tempting because the phrase “a hollow instrument” may be perceived as the parenthetical element, but it is incorrect because the entire parenthetical element is “rather than a hollow.”
- G. This choice may be tempting because the phrase “rather than” may be perceived as parenthetical, but it is incorrect because the entire parenthetical phrase is “rather than a hollow.”
- H. This choice may be tempting because “hollow” does describe an “instrument,” but it is incorrect because the word “hollow” is the last word in the parenthetical phrase and therefore must be followed by a comma.
- J. Correct. The phrase “rather than a hollow” is a parenthetical phrase and therefore should be set off by commas.

3.

- A. This choice may be tempting because it results in a compound sentence that is punctuated correctly, but it is incorrect because the pronoun “they” does not have a clear antecedent.
- B. Correct. It eliminates the ambiguous pronoun “they.”
- C. This choice may be tempting because it results in a complex sentence that is correctly punctuated, but it is incorrect because the pronoun “they” does not have a clear antecedent.
- D. This choice may be tempting because it results in a compound sentence that is punctuated correctly, but it is incorrect because the pronoun “they” does not have a clear antecedent.

4.

- F. This choice may be tempting because “genres” and “styles” might be perceived as different things, but it is incorrect because “genres” and “styles” are synonymous; therefore, the use of both is redundant.
- G. Correct. It expresses the intended idea in a clear, concise manner without redundancy.
- H. This choice may be tempting because it stresses the large number of different styles, but it is incorrect because it includes the repetitive “large number” and “too numerous to count” as well as the redundant “styles and genres.”
- J. This choice may be tempting because “numerous” and “many different” are not synonymous, but it is incorrect because “genres” and “styles” are synonymous and, therefore, redundant.



Mathematics

1.

- A. This choice may be tempting because i is a whole number when it is raised to a positive integer power that is divisible by 2, but it is incorrect because $\sqrt[3]{2}$ is only a whole number when it is raised to a positive integer power that is divisible by 3.
- B. This choice may be tempting because $\sqrt[3]{2}$ is a whole number when it is raised to a positive integer power that is divisible by 3, but it is incorrect because i is only a whole number when it is raised to a positive integer power that is divisible by 2.
- C. This choice may be tempting because i is a positive whole number when it is raised to a positive integer power that is divisible by 4, but it is incorrect because the question does not specify that $(kl)^n$ needs to be positive.
- D. Correct
- E. This choice may be tempting because $(kl)^n$ is a positive whole number when n is divisible by 12, but it is incorrect because the question does not specify that $(kl)^n$ needs to be positive.

2.

- F. Correct
- G. This choice may be tempting because the amount paid to the carpenter is three times the amount paid to the painter, but it is incorrect because that does not necessarily mean that the carpenter works for three hours.
- H. This choice may be tempting because it is the total combined hours worked by the carpenter and the painter together, but it is incorrect because the question only asks how many hours the carpenter works.
- J. This choice may be tempting because the painter works for two hours and the carpenter earns three times as much money, but it is incorrect because they work the same number of hours.
- K. This choice may be tempting because if the expression for the amount of money made by the carpenter is set equal to the amount of money

made by the painter, the result is -13 , but it is incorrect because the two workers did not make the same amount of money.

3.

- A. This choice may be tempting because $6(-5) = -30$, but it is incorrect because that function is only used if $|x| \leq 3$.
- B. Correct
- C. This choice may be tempting because $2(|-5| - 5) = 0$, but it is incorrect because the absolute value is only necessary in order to determine which function to use.
- D. This choice may be tempting because $(-5)^2 + 3(-5) + 1 = 11$, but it is incorrect because that function is only used if $3 < |x| < 5$.
- E. This choice may be tempting because $6(5) = 30$, but it is incorrect because a similar function is only used if $|x| \leq 3$.

4.

- F. This choice may be tempting because the area of the square is 16 square units, but it is incorrect because the area of the circle is 4π square units.
- G. This choice may be tempting because $\frac{16 - 4\pi}{4}$ is similar to $\frac{16}{4} - 4\pi$, but it is incorrect because the two expressions are not equivalent.
- H. Correct
- I. This choice may be tempting because it is the area of the square minus the area of the circle, but it is incorrect because the shaded region is one-fourth of the total resulting from the area of the square minus the area of the circle.



K. This choice may be tempting because the area of the square is 16 square units and the area of the circle is 4π square units, but it is incorrect because the shaded region is one-fourth of the difference, not the sum.

5.

- A.** This choice may be tempting because there are four different colors of paper, but it is incorrect because the question asks for the average number of pieces of each color.
- B.** This choice may be tempting because $\frac{40}{5} = 8$, but it is incorrect because there are only four different colors of paper.
- C.** Correct
- D.** This choice may be tempting because there are 16 blue pieces of paper, but it is incorrect because the question asks for the average number of pieces of each color.
- E.** This choice may be tempting because 25% is the average of the percent chance each color has of being chosen, but it is incorrect because the question asks for the average number of pieces of paper of each color.

6.

- F.** This choice may be tempting because $(-1, -1)$ would be the coordinates if this were a right triangle, but it is incorrect because the triangle is isosceles.
- G.** Correct
- H.** This choice may be tempting because the coordinates are two units down and three units to the left, but it is incorrect because it confuses the x - and y -coordinates.
- J.** This choice may be tempting because $(3, -0.5)$ are the coordinates of a right triangle with the x - and y -coordinates switched, but it is incorrect because the triangle is isosceles.
- K.** This choice may be tempting because the coordinates $(3.5, -1)$ indicate that the base has a

length of 6 units, but it is incorrect because the area of such a triangle would be 3 square units.

Reading

1.

- A.** This choice may be tempting because the subject of the passage is a mathematician preparing for an important moment in her life, but it is incorrect because the narrator is an unidentified individual who describes the thoughts and experiences of the main character, Ann.
- B.** This choice may be tempting because several memories from Ann's life are mentioned, but it is incorrect because the events in her life are not described as they happen in chronological order.
- C.** Correct. The narrator is never identified. This unidentified narrator, however, knows Ann's thoughts and experiences, and is able to describe in detail Ann's thoughts and feelings as she prepares to accept an important award.
- D.** This choice may be tempting because in lines 20–22 of the passage, the narrator mentions “physicists who were as gifted at crafting phrases as they were at devising convoluted, sprawling theories,” showing that Ann is capable of explaining complicated concepts in a way that is accessible to many people, but it is incorrect because the narrator is not identified as a journalist.

2.

- F.** This choice may be tempting because the narrator refers to Ann's “bubbles” of thoughts throughout the passage, but it is incorrect because the narrator does not indicate that Ann thinks of her sacrifices and scientific discoveries as “bubbles” as a way to calm herself.
- G.** This choice may be tempting because the narrator does briefly refer to the exhilaration Ann feels when debating with colleagues, but



it is incorrect because Ann does not use these thoughts to calm herself.

H. This choice may be tempting because the narrator describes how Ann recalls memories of teachers, classmates, and a former librarian as she walks to the stage, but it is incorrect because these memories are associated with obstacles she faced and do not calm her.

J. Correct. In lines 39–43, the narrator states, “Mindfulness helped ground her when her mind sped off in scientific revelry, so Ann focused on her breath and her tapping feet against the marble floor as she weaved through the tables and chairs.”

3.

A. Correct. In lines 61–72, the narrator describes taking an advanced math class while in high school, in which she earned the highest grade in the class, causing her classmates to groan and refer to her as “the curve killer.” She did not respond outwardly, but “internally she shined.”

B. This choice may be tempting because, throughout the passage, the narrator describes personal sacrifices Ann made in order to achieve her academic and professional goals, but it is incorrect because although the narrator hints that Ann did feel somewhat estranged from her classmates, there is no evidence to suggest that she did not form any attachments.

C. This choice may be tempting because in lines 61–72, the narrator describes how Ann felt pleased even when her classmates seemed to resent her successes. It is incorrect because there is no evidence that this provided further motivation for her to do better.

D. This choice may be tempting because in lines 61–62, the narrator states that the math class Ann took in eleventh grade was “the most advanced offered.” It is incorrect because there is no evidence that Ann felt the other students in the class provided competition for her to overcome.

4.

F. This choice may be tempting because the overall passage does address several challenges Ann has faced, but it is incorrect because there is no particular emphasis on finding ways to challenge herself in the future.

G. Correct. At the end of the passage in lines 97–100, the narrator states, “In her work, Ann believed that things stacked in a logical order (even if the order was occasionally inscrutable), but whether her life stacked up in the same way wasn’t as clear.”

H. This choice may be tempting because lines 97–99 of the passage refer to the logical order Ann experiences in her work, but it is incorrect because she immediately recognizes in lines 99–100 that this logic does not apply to her life.

J. This choice may be tempting because, throughout the text, Ann recalls several memories, but it is incorrect because there is no evidence to show that her memories are not accurate.

Science

1.

A. This choice may be tempting because it does explain that plant diversity leads to conservation of population, but it is incorrect because this is recommended but does not explain why it would lead to population conservation.

B. This choice may be tempting because it explains what nectar and pollen do for honeybees, but it is incorrect because it does not include information about the plant variety.

C. This choice may be tempting because bees may collect nectar from some plant species and pollen from others, but it is incorrect because this is not specified; rather, it only explains the difference between nectar and pollen.

D. Correct. The sugar concentration and protein composition vary in plants, so honeybees visit multiple plant species to fulfill nutritional needs.



2.

- F. This choice may be tempting because the table shows that native plants are dominant in the diet of honeybees studied, but it is incorrect because the study does not look at the amount of honey production.
- G. This choice may be tempting because the table shows that bees forage from a variety of plants, but it is incorrect because the studied garden contained more than 8,000 species, but 15 species accounted for more than 98% of the DNA.
- H. Correct. The majority of the plant DNA found in the honey was from native woodlands and grasslands.
- J. This choice may be tempting because nearly 30% of the plant DNA comes from willows, but it is incorrect because the bees in the study foraged from multiple species of plants.

3.

- A. This choice may be tempting because the peony offers the greatest contribution out of the plants that are only found in gardens, but it is incorrect because the question is about native grassland plants.
- B. This choice may be tempting because the willow offers the greatest contribution out of all plants, but it is incorrect because the question is about native grassland plants, and the willow is a native woodland plant.
- C. Correct. Hellebore is a native grassland plant that contributes 5.8% of the honeybee diet, which is more than any other on the list.
- D. This choice may be tempting because, based on the table, dandelion represents the greatest proportion of plants listed exclusively as a native grassland plant, but it is incorrect because the question does not preclude plants like hellebore, which is found in more than one setting.

4.

- F. This choice may be tempting, because willow is a native woodland plant, but it is incorrect, because the claim requires data from more than a single plant to be supported.

- G. Correct. The data supports the statement (11.6% for the three plants; 28.7% for willow), and the three plants represent all of the native grassland plants, while the willow is just one of the native woodland plants used.
- H. This choice may be tempting because the statement is true, and it might seem that having more plants automatically yields more pollen, but it is incorrect, because the claim is about the total amount of nectar and pollen, not the number of plant types represented.
- J. This choice may be tempting, because the data supports the statement (1.2% for the three plants; 4.1% for dandelion), but it is incorrect, because the three plants are garden plants, which are not mentioned in the claim.

Writing

Response (Possible 6 points)

Life skills such as financial planning, maintaining emotional wellness, and conflict resolution are very important for ensuring personal success. Most people learn these skills through experience or from family but not as a part of their formal education. The problem with learning through experience is that one must endure the processes of trial and error. And while learning from family is beneficial, it is not quite as effective as learning from a trained educator. Life skills should be taught in high schools to enrich people's lives and provide them with the tools they need to tackle daily challenges, like managing personal finances, dealing with stress, maintaining physical wellness, and building successful relationships through interpersonal skills.

A big part of being an adult is managing one's own finances and doing so responsibly and efficiently. It is crucial that young people learn how to budget their money and plan wisely for their futures. Often, young people make poor financial decisions such as choosing bad student loans, misusing credit cards, or simply trying to live beyond their means. A class on personal finance that teaches the finer points of budgeting, banking options, and maybe even income tax preparation might



prevent some of the poor choices typically made by recent high school graduates. It is almost impossible to achieve great success in life without practicing sound financial responsibility.

Knowing how to properly deal with life's stressors is crucial to one's physical and mental wellbeing. Proper nutrition and exercise can certainly help with stress, but learning specific strategies to help manage it during difficult times would be beneficial. Life is full of surprises, and it is difficult to make the transition from high school adolescent to young working adult. One must learn how to cope with the many changes that come with growing into young adulthood without compromising health. A class that teaches stress management techniques and coping skills would improve the way young people face problems that exist in the real world. Stress management is essential to achieving success in both the workplace and in our personal lives, and these skills will carry over into the workplace and throughout the rest of a person's life.

Relationships, whether familiar or professional, are arguably the most important aspects of our lives. How we interact with people impacts everything we do, from landing a dream job to starting a family. Understanding personal dynamics and body language is greatly beneficial, both in personal and professional relationships. A class that teaches high schoolers how to communicate more effectively and resolve conflict in a positive manner would increase their chance of professional success and improve their overall quality of life in the long run.

Life skills are too important to be left up to chance. Instead of assuming—or hoping—that young people will gain life skills through life experiences, they should be taught in the high school curriculum. Having professional educators teach classes on personal finance, stress management, and interpersonal skills in high

school, would better prepare young people for the challenges facing them in the real world. Equipping students with the tools they need to successfully navigate the challenges of adulthood will benefit them for the rest of their lives.

