

Question ID dadd5a11

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: dadd5a11

Approximate Rates of Speech and Information Conveyed for Five Languages

Language	Rate of speech (syllables per second)	Rate of information conveyed (bits per second)
Serbian	7.2	39.1
Spanish	7.7	42.0
Vietnamese	5.3	42.5
Thai	4.7	33.8
Hungarian	5.9	34.6

A group of researchers working in Europe, Asia, and Oceania conducted a study to determine how quickly different Eurasian languages are typically spoken (in syllables per second) and how much information they can effectively convey (in bits per second). They found that, although languages vary widely in the speed at which they are spoken, the amount of information languages can effectively convey tends to vary much less. Thus, they claim that two languages with very different spoken rates can nonetheless convey the same amount of information in a given amount of time.

Which choice best describes data from the table that support the researchers’ claim?

- A. Among the five languages in the table, Thai and Hungarian have the lowest rates of speech and the lowest rates of information conveyed.
- B. Vietnamese conveys information at approximately the same rate as Spanish despite being spoken at a slower rate.
- C. Among the five languages in the table, the language that is spoken the fastest is also the language that conveys information the fastest.
- D. Serbian and Spanish are spoken at approximately the same rate, but Serbian conveys information faster than Spanish does.

Question ID 902e2e43

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 902e2e43

In countries with right-hand traffic, drivers who want to make a left turn at a traffic intersection with stoplights have to wait for either a gap in oncoming traffic or a designated left-turn signal to turn green. At busy intersections, this often causes a backup of vehicles waiting to turn left or being prevented from proceeding by left-turning vehicles in front of them. Transportation researcher Vikash V. Gayah claims that in urban areas eliminating the option to turn left at busy intersections—both with and without dedicated left-turn signals—would improve traffic flow and, as a result, reduce overall travel times even if such a restriction would require drivers to sometimes travel a slightly longer distance.

Which finding, if true, would most directly support the researcher’s claim?

- A. In a town that installed left-turn signals at all busy intersections, seven out of ten survey respondents agreed with the statement “the streets in my community are easier to navigate by motor vehicle than before.”
- B. A traffic study of intersections in a large city shows that on average drivers wait longer to make a left turn at intersections without left-turn signals than at intersections with such signals.
- C. After a city eliminated left turns at busy intersections, a package-delivery company reports that its drivers have been able to reach more addresses in the city daily, on average, and therefore deliver more packages there annually.
- D. Statistics reveal that school buses in a city that eliminated left turns at most intersections took on average two minutes longer to complete their routes after the restriction took effect than they did before.

Question ID b0574a52

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: b0574a52

“Poetry” is a 1919 poem by Marianne Moore. The poem highlights an ambivalence toward poetry as the speaker acknowledges its merits while also expressing a sense of displeasure, writing _____

Which quotation from “Poetry” most effectively illustrates the claim?

- A. “nor is it valid / to discriminate against ‘business documents and / school-books’; all these phenomena are important.”
- B. “One must make a distinction / however: when dragged into prominence by half poets, the result is not / poetry”
- C. “when [poems] become so derivative as to become unintelligible, the / same thing may be said for all of us—that we / do not admire what / we cannot understand.”
- D. “Reading [poetry], however, with a perfect contempt for it, one discovers that there is in / it after all, a place for the genuine.”

Question ID 2d15748e

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 2d15748e

Electra is a circa 420–410 BCE play by Sophocles, translated in 1870 by R.C. Jebb. Electra, who is in mourning for her dead father and her long-absent brother, is aware of the intensity of her grief but believes it to be justified: _____

Which quotation from *Electra* most effectively illustrates the claim?

- A. “O thou pure sunlight, and thou air, earth’s canopy, how often have ye heard the strains of my lament, the wild blows dealt against this bleeding breast, when dark night fails!”
- B. “Send to me my brother; for I have no more the strength to bear up alone against the load of grief that weighs me down.”
- C. “I know my own passion, it escapes me not; but, seeing that the causes are so dire, will never curb these frenzied complaints, while life is in me.”
- D. “But never will I cease from dirge and sore lament, while I look on the trembling rays of the bright stars, or on this light of day.”

Question ID 49adb38e

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 49adb38e

Many archaeologists will tell you that categorizing excavated fragments of pottery by style, period, and what objects they belong to relies not only on standard criteria, but also on instinct developed over years of practice. In a recent study, however, researchers trained a deep-learning computer model on thousands of images of pottery fragments and found that it could categorize them as accurately as a team of expert archaeologists. Some archaeologists have expressed concern that they might be replaced by such computer models, but the researchers claim that outcome is highly unlikely.

Which finding, if true, would most directly support the researchers’ claim?

- A. In the researchers’ study, the model was able to categorize the pottery fragments much more quickly than the archaeologists could.
- B. In the researchers’ study, neither the model nor the archeologists were able to accurately categorize all the pottery fragments that were presented.
- C. A survey of archaeologists showed that categorizing pottery fragments limits the amount of time they can dedicate to other important tasks that only human experts can do.
- D. A survey of archaeologists showed that few of them received dedicated training in how to properly categorize pottery fragments.

Question ID e7899abb

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: e7899abb

E-book Sales as a Percentage of Total Unit Sales in All Book Formats for a Large US Trade Publisher, by Genre, 2006, 2011, 2016

Genre	2006	2011	2016
science fiction and fantasy	0.6	27.7	36.7
cookbooks	0	2.9	10.5
travel guides	0	5.5	24.6
romance	0.3	40.6	56.2

E-books became an increasingly popular means of reading in the United States in the 2000s and 2010s, though that popularity was concentrated in titles that, like those in most fiction genres, are meant to be read straight through from beginning to end. For books in nonfiction genres that do not tell stories and require the reader to flip back and forth through a volume, e-books were significantly less commercially successful. This can be seen by comparing _____

Which choice most effectively uses data from the table to illustrate the claim?

- A. the percentage of 2016 cookbook sales that were e-books with the percentage of 2016 science fiction and fantasy sales that were e-books.
- B. the percentage of 2006 romance sales that were e-books with the percentage of 2016 romance sales that were e-books.
- C. the percentage of 2006 romance sales that were e-books with the 2006 science fiction and fantasy sales that were e-books.
- D. the percentage of 2011 travel guide sales that were e-books with the percentage of 2016 travel guide sales that were e-books.

Question ID d5abe412

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: d5abe412

An Ideal Husband is an 1895 play by Oscar Wilde. In the play, which is a satire, Wilde suggests that a character named Lady Gertrude Chiltern is perceived as both extremely virtuous and unforgiving, as is evident when another character says _____

Which quotation from *An Ideal Husband* most effectively illustrates the claim?

- A. "Lady Chiltern is a woman of the very highest principles, I am glad to say. I am a little too old now, myself, to trouble about setting a good example, but I always admire people who do."
- B. "Do you know, [Lady Chiltern], I don't mind your talking morality a bit. Morality is simply the attitude we adopt towards people whom we personally dislike."
- C. "[Lady Chiltern] does not know what weakness or temptation is. I am of clay like other men. She stands apart as good women do—pitiless in her perfection—cold and stern and without mercy."
- D. "Lady Chiltern, you are a sensible woman, the most sensible woman in London, the most sensible woman I know."

Question ID 8b39297d

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 8b39297d

Pulitzer Prize–winning writer Héctor Tobar has built a multifaceted career as both a journalist and an author of short stories and novels. In an essay about Tobar’s work, a student claims that Tobar blends his areas of expertise by applying journalism techniques to his creation of works of fiction.

Which quotation from a literary critic best supports the student’s claim?

- A. “For one novel, an imagined account of a real person’s global travels, Tobar approached his subject like a reporter, interviewing people the man had met along the way and researching the man’s own writings.”
- B. “Tobar got his start as a volunteer for *El Tecolote*, a community newspaper in San Francisco, and wrote for newspapers for years before earning a degree in creative writing and starting to publish works of fiction.”
- C. “Many of Tobar’s notable nonfiction articles are marked by the writer’s use of techniques usually associated with fiction, such as complex narrative structures and the incorporation of symbolism.”
- D. “The protagonist of Tobar’s third novel is a man who wants to be a novelist and keeps notes about interesting people he encounters so he can use them when developing characters for his stories.”

Question ID 1ee6eb70

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 1ee6eb70

Mean Ratings for Patients after 21 Days

Measure	Mean rating for participants aware of taking a placebo	Mean rating for participants in the control group
Global improvement	5.0	3.9
Symptom severity reduction	92.00	46.00
Quality of life improvement	11.4	5.4

To test whether a medication is effective, scientists compare outcomes for patients taking it and patients taking a placebo (a medically inactive substance). Patients normally aren't told they're receiving a placebo, but a research team conducted a study to see if there might be a medical benefit to telling them. The team used various measures to evaluate participants, with higher ratings indicating greater well-being in each measure. Compared to the mean ratings after 21 days for participants in the control group, the mean ratings for participants who were aware of taking a placebo _____

Which choice most effectively uses data from the table to complete the statement?

- A. ranged from 5.0 to 92.00, indicating that well-being varied widely from participant to participant.
- B. were lower for two measures, with the rating for only one measure indicating greater well-being for these participants.
- C. ranged from 3.9 to 46.00, with no rating indicating greater well-being in any measure for these participants.
- D. were higher for all three measures, indicating greater overall well-being for these participants.

Question ID 2d8aec42

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 2d8aec42

Effect of Paywall Introduction on Newspaper Companies’ Revenues

Newspaper	Total revenue change (\$ in thousands)	Percentage change (%)	Newspaper size
Los Angeles Times	93,966	12.5	large
The New York Times	235,788	20	large
The Denver Post	−3,765	−1	small
Sun Sentinel	−24,899	−11.9	small
Chicago Tribune	94,492	19	large

Digital paywalls restrict access to online content to those with a paid subscription. In an investigation of the effect of paywalls on newspaper company revenues for print and digital subscriptions and advertising, Doug J. Chung and colleagues compared actual outcomes (with a paywall) to control estimates (without a paywall). The researchers concluded that introducing a paywall is generally more beneficial for larger newspapers, which have high circulation and tend to offer a substantial amount of unique online content.

Which choice best describes data from the table that support Chung and colleagues’ conclusion?

- A. The *Chicago Tribune* and the *Los Angeles Times* had similar total revenue changes, but the *Los Angeles Times* had a smaller percentage change.
- B. The *Los Angeles Times* had a 12.5% revenue change, while the *Chicago Tribune* had a 19% revenue change.
- C. The *New York Times* had a 20% revenue change, while the *Denver Post* had a −1% revenue change.
- D. The *Denver Post* had only a −1% revenue change, which was the smallest percentage change of the selected companies.

Question ID 6610977e

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 6610977e

Archaeologist Petra Vaiglova, anthropologist Xinyi Liu, and their colleagues investigated the domestication of farm animals in China during the Bronze Age (approximately 2000 to 1000 BCE). By analyzing the chemical composition of the bones of sheep, goats, and cattle from this era, the team determined that wild plants made up the bulk of sheep’s and goats’ diets, while the cattle’s diet consisted largely of millet, a crop cultivated by humans. The team concluded that cattle were likely raised closer to human settlements, whereas sheep and goats were allowed to roam farther away.

Which finding, if true, would most strongly support the team’s conclusion?

- A. Analysis of the animal bones showed that the cattle’s diet also consisted of wheat, which humans widely cultivated in China during the Bronze Age.
- B. Further investigation of sheep and goat bones revealed that their diets consisted of small portions of millet as well.
- C. Cattle’s diets generally require larger amounts of food and a greater variety of nutrients than do sheep’s and goats’ diets.
- D. The diets of sheep, goats, and cattle were found to vary based on what the farmers in each Bronze Age settlement could grow.

Question ID 0883a579

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 0883a579

The variety of species with adaptations to produce toxins is matched by the variety of uses of those toxins: northern stargazers, for example, use toxins for defense, whereas tiger snakes use toxins for predation and skeleton shrimp use toxins for intraspecific competition. In fact, a species may have adaptations enabling it to produce a toxin with multiple uses. Finding that the venom used by the Panamanian scorpion *Centruroides granosus* to subdue prey also inhibits growth of the pathogenic bacteria *Escherichia coli*, Dumas Gálvez and colleagues conclude that the particular form of venom production observed in *C. granosus* may have propagated through the species because it mitigates risk during feeding in addition to enhancing predation success.

Which finding, if true, would most directly support Gálvez and colleagues’ conclusion?

- A. *E. coli* does not appear to be virulent for *C. granosus* even when transmitted from prey captured without the use of venom.
- B. *E. coli* is frequently found in species preyed on by *C. granosus* and can survive exposure to the digestive juices of *C. granosus*.
- C. *C. granosus* appears to be chemically sensitive to prey infected with *E. coli* and tends to favor uninfected individuals.
- D. Exposure to *C. granosus* venom also inhibits the growth of nonpathogenic bacteria species common in the native environment of *C. granosus*.

Question ID 0a46b3e5

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 0a46b3e5

Puerto Rico is an island in the Caribbean Sea. Indigenous people there started raising guinea pigs about 1,700 years ago. Guinea pigs had originally been domesticated much earlier in both Colombia and Peru. So were guinea pigs brought to Puerto Rico from Colombia or from Peru? Ancient Caribbean trade routes connected Puerto Rico with Colombia but not with Peru. Therefore, guinea pigs in Puerto Rico probably came from Colombia and descended from Colombian guinea pigs.

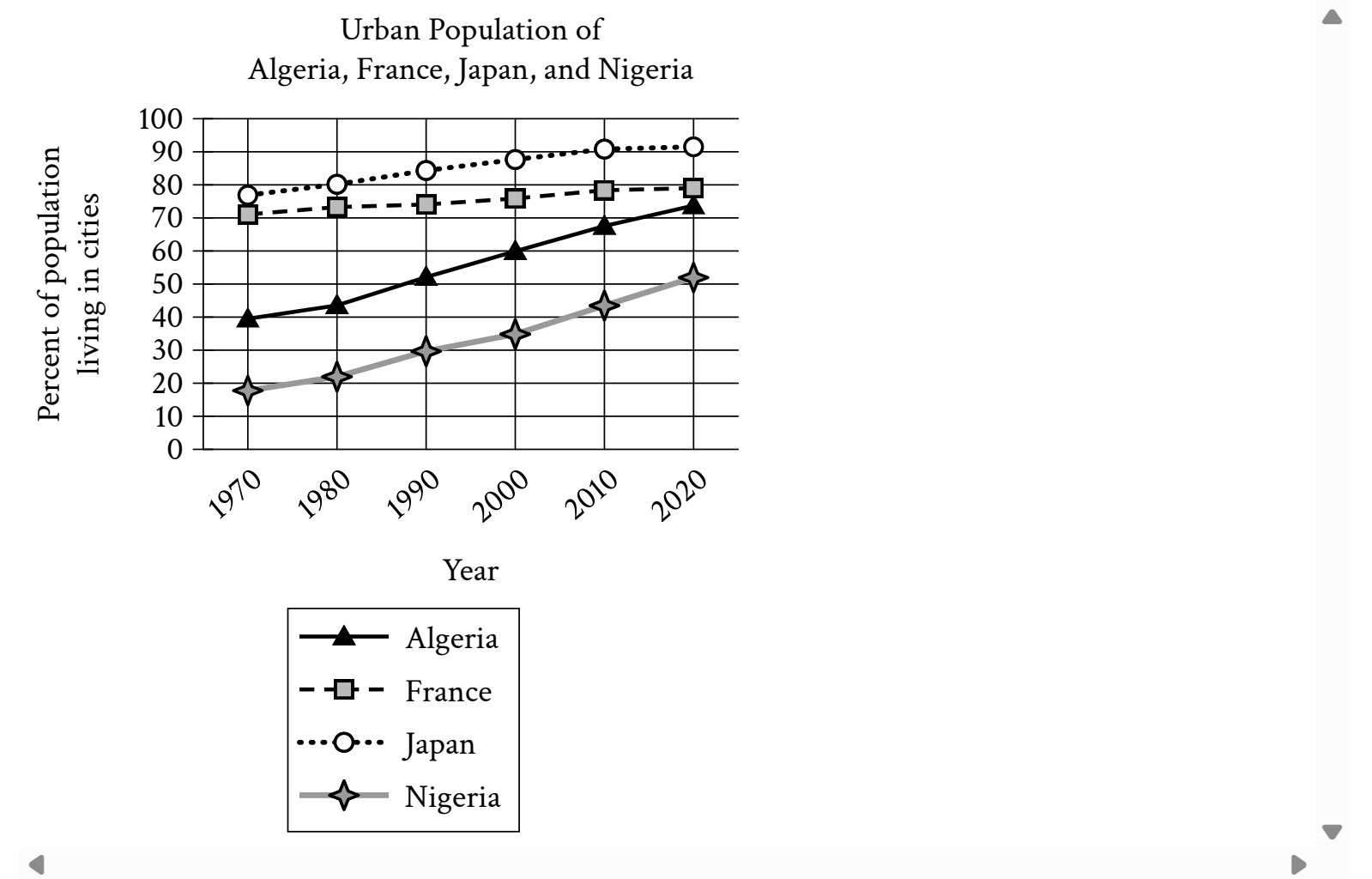
Which finding, if true, would most directly weaken the underlined claim?

- A. Ancient guinea pigs in Puerto Rico were genetically less similar to ancient guinea pigs in Colombia than to ancient guinea pigs in Peru.
- B. Guinea pigs are common in ancient Puerto Rican art, especially in pottery.
- C. Modern breeds of guinea pigs don't look like images of guinea pigs in ancient art from Puerto Rico, Colombia, and Peru.
- D. The guinea pig population of ancient Colombia was much larger than the guinea pig population of ancient Peru.

Question ID 50bdebcc

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 50bdebcc



The share of the world’s population living in cities has increased dramatically since 1970, but this change has not been uniform. France and Japan, for example, were already heavily urbanized in 1970, with 70% or more of the population living in cities. The main contributors to the world’s urbanization since 1970 have been countries like Algeria, whose population went from _____

Which choice most effectively uses data from the graph to complete the assertion?

- A. around 50% urban in 1970 to around 90% urban in 2020.
- B. less than 40% urban in 1970 to around 90% urban in 2020.
- C. less than 20% urban in 1970 to more than 50% urban in 2020.
- D. around 40% urban in 1970 to more than 70% urban in 2020.

Question ID afd16fcc

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: afd16fcc

Jan Gimsa, Robert Sleight, and Ulrike Gimsa have hypothesized that the sail-like structure running down the back of the dinosaur *Spinosaurus aegyptiacus* improved the animal’s success in underwater pursuits of prey species capable of making quick, evasive movements. To evaluate their hypothesis, a second team of researchers constructed two battery-powered mechanical models of *S. aegyptiacus*, one with a sail and one without, and subjected the models to a series of identical tests in a water-filled tank.

Which finding from the model tests, if true, would most strongly support Gimsa and colleagues’ hypothesis?

- A. The model with a sail took significantly less time to complete a sharp turn while submerged than the model without a sail did.
- B. The model with a sail displaced significantly more water while submerged than the model without a sail did.
- C. The model with a sail had significantly less battery power remaining after completing the tests than the model without a sail did.
- D. The model with a sail took significantly longer to travel a specified distance while submerged than the model without a sail did.

Question ID 084f845a

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 084f845a

Estimates of Tyrannosaurid Bite Force

Study	Year	Estimation method	Approximate bite force (newtons)
Cost et al.	2019	muscular and skeletal modeling	35,000–63,000
Gignac and Erickson	2017	tooth-bone interaction analysis	8,000–34,000
Meers	2002	body-mass scaling	183,000–235,000
Bates and Falkingham	2012	muscular and skeletal modeling	35,000–57,000

The largest tyrannosaurids—the family of carnivorous dinosaurs that includes *Tarbosaurus*, *Albertosaurus*, and, most famously, *Tyrannosaurus rex*—are thought to have had the strongest bites of any land animals in Earth’s history. Determining the bite force of extinct animals can be difficult, however, and paleontologists Paul Barrett and Emily Rayfield have suggested that an estimate of dinosaur bite force may be significantly influenced by the methodology used in generating that estimate.

Which choice best describes data from the table that support Barrett and Rayfield’s suggestion?

- A. The study by Meers used body-mass scaling and produced the lowest estimated maximum bite force, while the study by Cost et al. used muscular and skeletal modeling and produced the highest estimated maximum.
- B. In their study, Gignac and Erickson used tooth-bone interaction analysis to produce an estimated bite force range with a minimum of 8,000 newtons and a maximum of 34,000 newtons.
- C. The bite force estimates produced by Bates and Falkingham and by Cost et al. were similar to each other, while the estimates produced by Meers and by Gignac and Erickson each differed substantially from any other estimate.
- D. The estimated maximum bite force produced by Cost et al. exceeded the estimated maximum produced by Bates and Falkingham, even though both groups of researchers used the same method to generate their estimates.

Question ID 366038a0

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 366038a0

Neural networks are computer models intended to reflect the organization of human brains and are often used in studies of brain function. According to an analysis of 11,000 such networks, Rylan Schaeffer and colleagues advise caution when drawing conclusions about brains from observations of neural networks. They found that when attempting to mimic grid cells (brain cells used in navigation), while 90% of the networks could accomplish navigation-related tasks, only about 10% of those exhibited any behaviors similar to those of grid cells. But even this approximation of grid-cell activity has less to do with similarity between the neural networks and biological brains than it does with the rules programmed into the networks.

Which finding, if true, would most directly support the claim in the underlined sentence?

- A. The rules that allow for networks to exhibit behaviors like those of grid cells have no equivalent in the function of biological brains.
- B. The networks that do not exhibit behaviors like those of grid cells were nonetheless programmed with rules that had proven useful in earlier neural-network studies.
- C. Neural networks can often accomplish tasks that biological brains do, but they are typically programmed with rules to model multiple types of brain cells simultaneously.
- D. Once a neural network is programmed, it is trained on certain tasks to see if it can independently arrive at processes that are similar to those performed by biological brains.

Question ID 6649150d

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 6649150d

Tadpole Body Mass and Toxin Production after Three Weeks in Ponds

Population density	Average tadpole body mass (milligrams)	Average number of distinct bufadienolide toxins per tadpole	Average amount of bufadienolide per tadpole (nanograms)	Average bufadienolide concentration (nanograms per milligram of tadpole body mass)
High	193.87	22.69	5,815.51	374.22
Medium	254.56	21.65	5,525.72	230.10
Low	258.97	22.08	4,664.99	171.43

Ecologist Veronika Bókony and colleagues investigated within-species competition among common toads (*Bufo bufo*), a species that secretes various unpleasant-tasting toxins called bufadienolides in response to threats. The researchers tested *B. bufo* tadpoles’ responses to different levels of competition by creating ponds with different tadpole population densities but a fixed amount of food. Based on analysis of the tadpoles after three weeks, the researchers concluded that increased competition drove bufadienolide production at the expense of growth.

Which choice uses data from the table to most effectively support the researchers’ conclusion?

- A. The difference in average tadpole body mass was small between the low and medium population density conditions and substantially larger between the low and high population density conditions.
- B. Tadpoles in the low and medium population density conditions had substantially lower average bufadienolide concentrations but had greater average body masses than those in the high population density condition.
- C. Tadpoles in the high population density condition displayed a relatively modest increase in the average amount of bufadienolide but roughly double the average bufadienolide concentration compared to those in the low population density condition.
- D. Tadpoles produced approximately the same number of different bufadienolide toxins per individual across the population density conditions, but average tadpole body mass decreased as population density increased.

Question ID 2d3b8ce9

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 2d3b8ce9

“The Young Girl” is a 1920 short story by Katherine Mansfield. In the story, the narrator takes an unnamed seventeen-year-old girl and her younger brother out for a meal. In describing the teenager, Mansfield frequently contrasts the character’s pleasant appearance with her unpleasant attitude, as when Mansfield writes of the teenager, _____

Which quotation from “The Young Girl” most effectively illustrates the claim?

- A. “I heard her murmur, ‘I can’t bear flowers on a table.’ They had evidently been giving her intense pain, for she positively closed her eyes as I moved them away.”
- B. “While we waited she took out a little, gold powder-box with a mirror in the lid, shook the poor little puff as though she loathed it, and dabbed her lovely nose.”
- C. “I saw, after that, she couldn’t stand this place a moment longer, and, indeed, she jumped up and turned away while I went through the vulgar act of paying for the tea.”
- D. “She didn’t even take her gloves off. She lowered her eyes and drummed on the table. When a faint violin sounded she winced and bit her lip again. Silence.”

Question ID 78677bf4

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 78677bf4

Declining fishing technology costs and overexploitation of near-shore fishing grounds have made isolated oceanic reefs, which often lack regulatory protections, increasingly attractive to commercial and sport fishers. A team led by Octavio Aburto-Oropeza surveyed the biomass density and species composition of two isolated reefs: Alacranes, a protected (fishing prohibited) reef 135 kilometers from the Yucatan Peninsula, and Bajos del Norte, an unprotected reef 25 kilometers farther out to sea. Species at the highest level of the trophic pyramid constituted 34% of the biomass at Alacranes and 10% of the biomass at Bajos del Norte. Aburto-Oropeza and colleagues attribute this difference to the two reefs’ difference in regulatory status.

Which finding, if true, would most directly support Aburto-Oropeza and colleagues’ explanation?

- A. Total biomass at Alacranes is much greater than total biomass at Bajos del Norte, though the reefs’ biomass densities are similar.
- B. Some of the species that compose the highest trophic level at Bajos del Norte are not found at Alacranes.
- C. It is somewhat more expensive for commercial and sport fishers to reach Bajos del Norte than it is to reach Alacranes.
- D. Commercial and sport fishers tend to disproportionately remove species at the highest trophic level.

Question ID 1f80067e

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 1f80067e

American fashion designer Patrick Kelly was known for his love of colorful buttons. Many of his signature dresses feature bold assortments of buttons throughout the garment. In a paper, a fashion design student claims that Kelly’s use of buttons as decoration was inspired by his childhood observations of the styles and actions of the women in his family.

Which quotation from a work by a historian would be the most effective evidence for the student to include in support of this claim?

- A. “Although some of the assortments of buttons appear to be mismatched pieces scattered randomly throughout Kelly’s dresses, his most famous designs feature carefully crafted patterns of matching buttons.”
- B. “Many of Kelly’s contemporaries were inspired by his designs to incorporate buttons, as well as zippers and snaps, as decorative items in their work.”
- C. “Kelly’s grandmother, who would repair clothing when he was a child, frequently added mismatched buttons to the clothes to draw attention away from any flaws in the garments.”
- D. “Kelly was destined to be a designer from a young age: he learned how to sew clothing from his aunt Bertha, and his love of drawing was developed by his mother.”

Question ID ad12047a

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: ad12047a

A researcher conducted an experiment inspired by studies suggesting that people may benefit from feeling frightened in certain circumstances, such as when watching scary movies or visiting haunted attractions. The researcher recruited several participants and had them walk through a local haunted house attraction. Immediately after exiting the attraction, each participant completed a survey about their experience. Based on the survey responses, the researcher claims that feeling frightened in controlled situations can boost a person’s mood and confidence.

Which quotation from a participant would best illustrate the researcher’s claim?

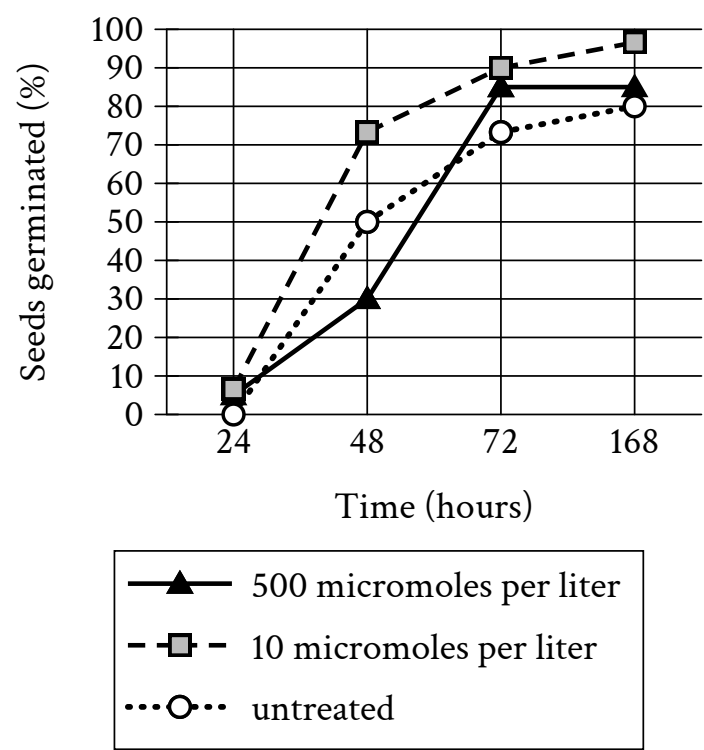
- A. “After I came out of the haunted house, I felt very accomplished and less stressed.”
- B. “My friends kept laughing as we were walking through the haunted house.”
- C. “The haunted house was scary at first, but I knew everyone was just acting, so I felt less scared after a few minutes.”
- D. “The sense of relief I felt at the end of the haunted house was similar to the feelings I have when I finish a scary movie.”

Question ID 0695d037

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div></div> <div></div> <div></div>

ID: 0695d037

Seed Germination with and without H₂S Treatment



In high concentrations, hydrogen sulfide (H₂S) is typically toxic to many plants. Frederick D. Dooley and colleagues wanted to understand what effects low doses of H₂S might have on plant growth. They treated bean, corn, wheat, and pea seeds with various concentrations (measured in micromoles per liter) of H₂S and tracked the germination of those seeds along with the germination of untreated seeds. Treatment with particular concentrations of H₂S was associated with accelerated germination: for example, _____

Which choice most effectively uses data from the graph to complete the statement?

- A. at 24 hours, less than 10% of seeds treated with H₂S at a concentration of 10 micromoles per liter had germinated, whereas more than 90% of those seeds had germinated at 168 hours.
- B. at 48 hours, more than 70% of seeds treated with H₂S at a concentration of 10 micromoles per liter had germinated, whereas only approximately 50% of untreated seeds had germinated.
- C. at 168 hours, more than 90% of seeds treated with H₂S at concentrations of 10 or 500 micromoles per liter had germinated, whereas less than 70% of untreated seeds had germinated.
- D. at 48 hours, approximately 50% of seeds treated with H₂S at a concentration of 10 micromoles per liter had germinated, whereas only approximately 30% of untreated seeds had germinated.

Question ID 91f4c01b

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 91f4c01b

A student is writing a paper about *One Night in Miami...*, a 2020 film directed by Regina King and written by Kemp Powers. Powers adapted the film’s screenplay from his 2013 play, which he wrote after learning about a 1964 meeting that took place in Miami, Florida, between four prominent figures of the Civil Rights movement: Malcolm X, Muhammad Ali, Jim Brown, and Sam Cooke. The student claims that although Powers was inspired by this meeting, the film is best understood not as a precise retelling of historical events but rather as a largely imagined but informed representation of them.

Which quotation from an article about *One Night in Miami...* would be the most effective evidence for the student to include in support of this claim?

- A. “When Powers learned of the meeting, he initially planned to write a much longer work about its four famous participants rather than focusing on the meeting itself.”
- B. “*One Night in Miami...* received numerous awards and nominations, including an Academy Award nomination for Powers for Best Adapted Screenplay.”
- C. “Powers has described *One Night in Miami...* as the story of four friends encouraging and supporting one another while engaged in a crucial political debate about how best to achieve equality for Black people in the United States.”
- D. “Powers could find only the most superficial historical details about the meeting, so he read extensively about the four individuals and their thinking at the time in an effort to portray what might have happened between them.”

Question ID 38fdf03e

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 38fdf03e

As media consumption has become increasingly multiplatform and socially mediated, active news acquisition has diminished in favor of an attitude known as “news finds me” (NFM), in which people passively rely on their social networks and ambient media environments for information about current events. Homero Gil de Zúñiga and Trevor Diehl examined data on a representative group of adults in the United States to determine participants’ strength of NFM attitude, political knowledge, and political interest. Although no major election took place sufficiently near the study for Gil de Zúñiga and Diehl to identify causality between NFM and voting behavior, they did posit that NFM may reduce voting probability through an indirect effect.

Which finding, if true, would most directly support the idea advanced by Gil de Zúñiga and Diehl?

- A. NFM attitude tends to increase in strength as major elections approach, and people are significantly more likely to vote in major elections than in minor elections.
- B. NFM attitude has a strong negative effect on political knowledge and interest, and there is known to be a strong positive correlation between political knowledge and interest and the likelihood of voting.
- C. Political interest is known to have a strong positive effect on likelihood of voting but shows only a weak positive effect on political knowledge, and NFM attitude shows little correlation with either political knowledge or political interest.
- D. The likelihood of voting increases as political knowledge increases, and the relationship between NFM attitude and political knowledge tends to strengthen as the size of people’s social networks increases.

Question ID 420a24bd

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 420a24bd

Hedda Gabler is an 1890 play by Henrik Ibsen. As a woman in the Victorian era, Hedda, the play’s central character, is unable to freely determine her own future. Instead, she seeks to influence another person’s fate, as is evident when she says to another character, _____

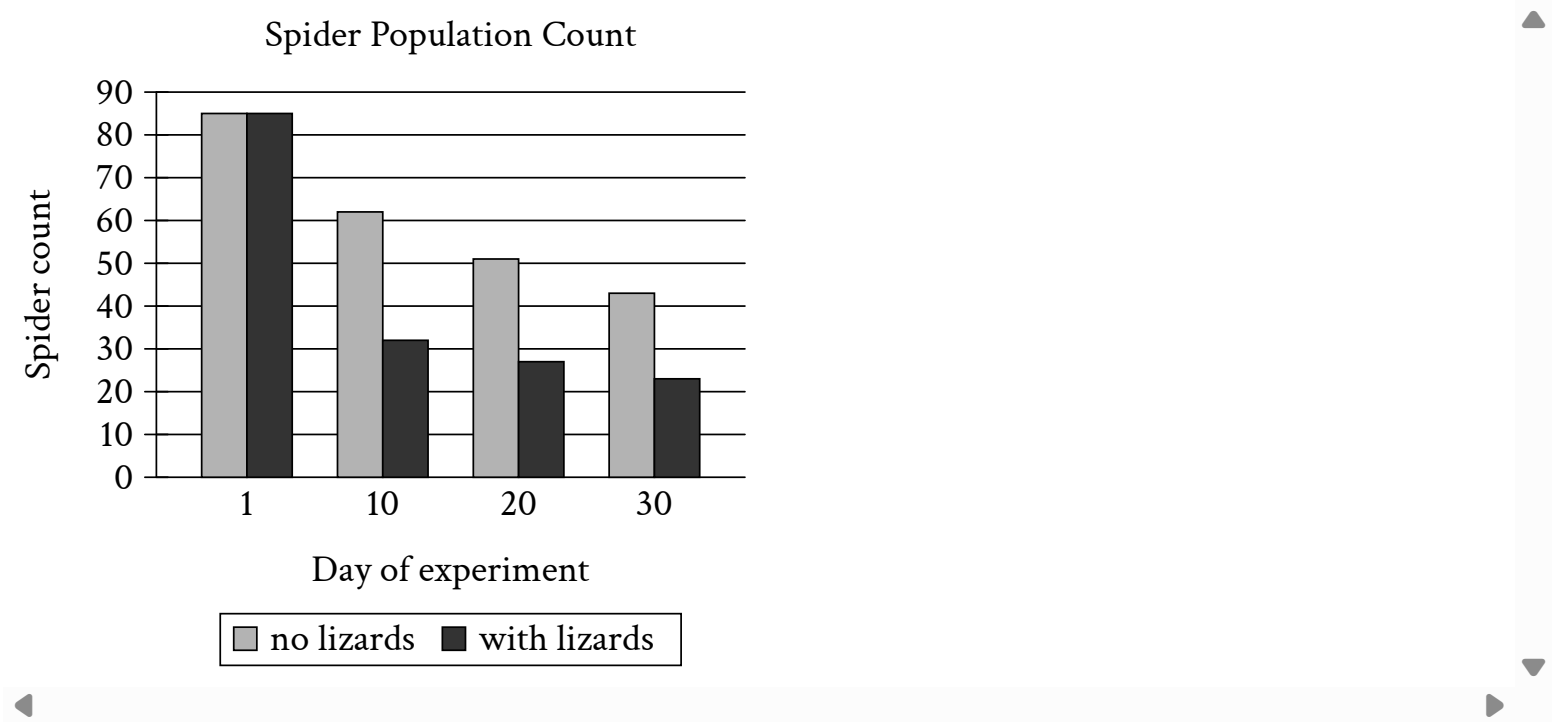
Which quotation from a translation of *Hedda Gabler* most effectively illustrates the claim?

- A. “Then what in heaven’s name would you have me do with myself?”
- B. “I want for once in my life to have power to mould a human destiny.”
- C. “Then I, poor creature, have no sort of power over you?”
- D. “Faithful to your principles, now and for ever! Ah, that is how a man should be!”

Question ID fb77b411

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: fb77b411



To investigate the effect of lizard predation on spider populations, a student in a biology class placed spiders in two enclosures, one with lizards and one without, and tracked the number of spiders in the enclosures for 30 days. The student concluded that the reduction in the spider population count in the enclosure with lizards by day 30 was entirely attributable to the presence of the lizards.

Which choice best describes data from the graph that weaken the student’s conclusion?

- A. The spider population count was the same in both enclosures on day 1.
- B. The spider population count also substantially declined by day 30 in the enclosure without lizards.
- C. The largest decline in spider population count in the enclosure with lizards occurred from day 1 to day 10.
- D. The spider population count on day 30 was lower in the enclosure with lizards than in the enclosure without lizards.

Question ID 7b860813

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 7b860813

While attending school in New York City in the 1980s, Okwui Enwezor encountered few works by African artists in exhibitions, despite New York’s reputation as one of the best places to view contemporary art from around the world. According to an arts journalist, later in his career as a renowned curator and art historian, Enwezor sought to remedy this deficiency, not by focusing solely on modern African artists, but by showing how their work fits into the larger context of global modern art and art history.

Which finding, if true, would most directly support the journalist’s claim?

- A. As curator of the Haus der Kunst in Munich, Germany, Enwezor organized a retrospective of Ghanaian sculptor El Anatsui’s work entitled *El Anatsui: Triumphant Scale*, one of the largest art exhibitions devoted to a Black artist in Europe’s history.
- B. In the exhibition *Postwar: Art Between the Pacific and the Atlantic, 1945–1965*, Enwezor and cocurator Katy Siegel brought works by African artists such as Malangatana Ngwenya together with pieces by major figures from other countries, like US artist Andy Warhol and Mexico’s David Siqueiros.
- C. Enwezor’s work as curator of the 2001 exhibition *The Short Century: Independence and Liberation Movements in Africa, 1945–1994* showed how African movements for independence from European colonial powers following the Second World War profoundly influenced work by African artists of the period, such as Kamala Ibrahim Ishaq and Thomas Mukarobgwa.
- D. Enwezor organized the exhibition *In/sight: African Photographers, 1940 to the Present* not to emphasize a particular aesthetic trend but to demonstrate the broad range of ways in which African artists have approached the medium of photography.

Question ID 21c51108

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 21c51108

Survey Results for Two Online Account Sign-in Methods

Sign-in method	Percent of participants in the UK who chose method	Percent of participants in Japan who chose method	Percent of participants in India who chose method
Biometrics (for example, a face scan)	33	29	22
Onetime passcodes	16	8	25

A survey listed methods for signing into online accounts. Participants in different countries were asked to choose the sign-in method they view as most secure. The table presents data for two of the methods. According to the table, onetime passcodes were viewed as most secure by _____

Which choice most effectively uses data from the table to complete the text?

- A. 33 percent of survey participants in the UK.
- B. 22 percent of survey participants in India.
- C. 8 percent of survey participants in Japan.
- D. 16 percent of survey participants in India.

Question ID 2d3477a5

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 2d3477a5

Male túngara frogs make complex calls to attract mates, but their calls also attract frog-biting midges, insects that feed on the frogs’ blood. Researchers Ximena Bernal and Priyanka de Silva wondered if the calls alone are sufficient for midges to locate the frogs or if midges use carbon dioxide emitted by frogs as an additional cue to their prey’s whereabouts, like mosquitoes do. In an experiment, the researchers placed two midge traps in a túngara frog breeding area. One trap played recordings of túngara frog calls and the other released carbon dioxide along with playing the calls. Bernal and de Silva concluded that carbon dioxide does not serve as an additional cue to frog-biting midges.

Which finding from the experiment, if true, would most directly support Bernal and de Silva’s conclusion?

- A. Only a small number of midges were found in the traps, though the majority were found in the trap that played calls and released carbon dioxide.
- B. Midges entered the trap that released carbon dioxide and played calls only during or immediately after periods of carbon dioxide release.
- C. More midges were found in the trap that only played calls than in the trap that played calls and released carbon dioxide.
- D. The trap that released carbon dioxide and played calls attracted few midges when carbon dioxide concentrations were low but attracted many midges when carbon dioxide concentrations were high.

Question ID cd3fbdde

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: cd3fbdde

Although Eastern North Pacific (ENP) gray whales generally migrate between their wintering waters along the coast of Mexico and their foraging waters in the Arctic, a subset of this population—known as the Pacific Coast Feeding Group (PCFG)—forages along the coastlines of Northern California (USA) and British Columbia (Canada) instead. Interestingly, individuals in this subset reach smaller maximum sizes than other ENP whales do, despite having similar pre-maximum growth rates. Researchers hypothesize that this difference may be an adaptation to distinct resource opportunities in the PCFG foraging range.

Which finding, if true, would most directly support the researchers’ claim regarding the size of PCFG whales?

- A. The average body size of PCFG whales observed along the coasts of Northern California and British Columbia has remained relatively steady in recent decades, while the average body size of ENP whales in the main group has slightly decreased.
- B. When present along the coasts of Northern California and British Columbia, PCFG whales tend to forage in rocky kelp beds at shallow depths inaccessible to whales as large as those in the ENP main group.
- C. When foraging along the coasts of Northern California and British Columbia, PCFG whales are in closer proximity to major ports and urban populations than ENP whales in the main group are when foraging in Arctic waters.
- D. Certain crustacean prey species available along the coasts of Northern California and British Columbia where PCFG whales tend to forage are not available in the Arctic waters where ENP whales in the main group forage.

Question ID 17e6e0bf

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 17e6e0bf

The novelist Toni Morrison was the first Black woman to work as an editor at the publishing company Random House, from 1967 to 1983. A scholar asserts that one of Morrison’s likely aims during her time as an editor was to strengthen the presence of Black writers on the list of Random House’s published authors.

Which finding, if true, would most strongly support the scholar’s claim?

- A. The percentage of authors published by Random House who were Black rose in the early 1970s and stabilized throughout the decade.
- B. Black authors who were interviewed in the 1980s and 1990s were highly likely to cite Toni Morrison’s novels as a principal influence on their work.
- C. The novels written by Toni Morrison that were published after 1983 sold significantly more copies and received wider critical acclaim than the novels she wrote that were published before 1983.
- D. Works that were edited by Toni Morrison during her time at Random House displayed stylistic characteristics that distinguished them from works that were not edited by Morrison.

Question ID 7f5420a4

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 7f5420a4

Incorporated and Unincorporated Self-Employment Rates in Four Occupational Fields, 2015

Occupational field	Incorporated self-employment rate	Unincorporated self-employment rate
Construction and resource extraction	4.4%	14.8%
Installation, maintenance, and repair	2.7%	6.2%
Management, business, and financial services	8.9%	9.7%
Sales and related	5.8%	7.8%

Self-employed workers—individuals who are not employees of other individuals or businesses but instead earn their income as business owners, independent contractors, or freelance workers—make up an important part of the US labor force. In order to receive legal and tax benefits enjoyed by corporations, self-employed individuals may choose to incorporate their business. A 2015 survey of incorporated and unincorporated self-employment rates in four occupational fields showed that the highest incorporated self-employment rate occurred among people working in _____

Which choice most effectively uses data from the table to complete the text?

- A. sales and related occupations.
- B. installation, maintenance, and repair occupations.
- C. construction and resource extraction occupations.
- D. management, business, and financial services occupations.

Question ID d4b75d29

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: d4b75d29

In the mountains of Brazil, *Barbacenia tomentosa* and *Barbacenia macrantha*—two plants in the Velloziaceae family—establish themselves on soilless, nutrient-poor patches of quartzite rock. Plant ecologists Anna Abrahão and Patricia de Britto Costa used microscopic analysis to determine that the roots of *B. tomentosa* and *B. macrantha*, which grow directly into the quartzite, have clusters of fine hairs near the root tip; further analysis indicated that these hairs secrete both malic and citric acids. The researchers hypothesize that the plants depend on dissolving underlying rock with these acids, as the process not only creates channels for continued growth but also releases phosphates that provide the vital nutrient phosphorus.

Which finding, if true, would most directly support the researchers’ hypothesis?

- A. Other species in the Velloziaceae family are found in terrains with more soil but have root structures similar to those of *B. tomentosa* and *B. macrantha*.
- B. Though *B. tomentosa* and *B. macrantha* both secrete citric and malic acids, each species produces the acids in different proportions.
- C. The roots of *B. tomentosa* and *B. macrantha* carve new entry points into rocks even when cracks in the surface are readily available.
- D. *B. tomentosa* and *B. macrantha* thrive even when transferred to the surfaces of rocks that do not contain phosphates.

Question ID 69bb11f9

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 69bb11f9

“Ad recall” measures how memorable an advertising campaign is. To provide advertisers with information about their ads’ memorability, a social media site regularly surveys users about whether they remember ads they had recently interacted with on the site. In a study that drew on this survey data, advertising researcher Kristen Sussman and colleagues noted that different kinds of social media interactions involve different levels of cognitive engagement: commenting on or sharing a post is more cognitively demanding than is clicking on embedded links or on a “like” button. The researchers hypothesized that interactions indicating high levels of cognitive engagement with ad content would result in relatively high levels of ad recall.

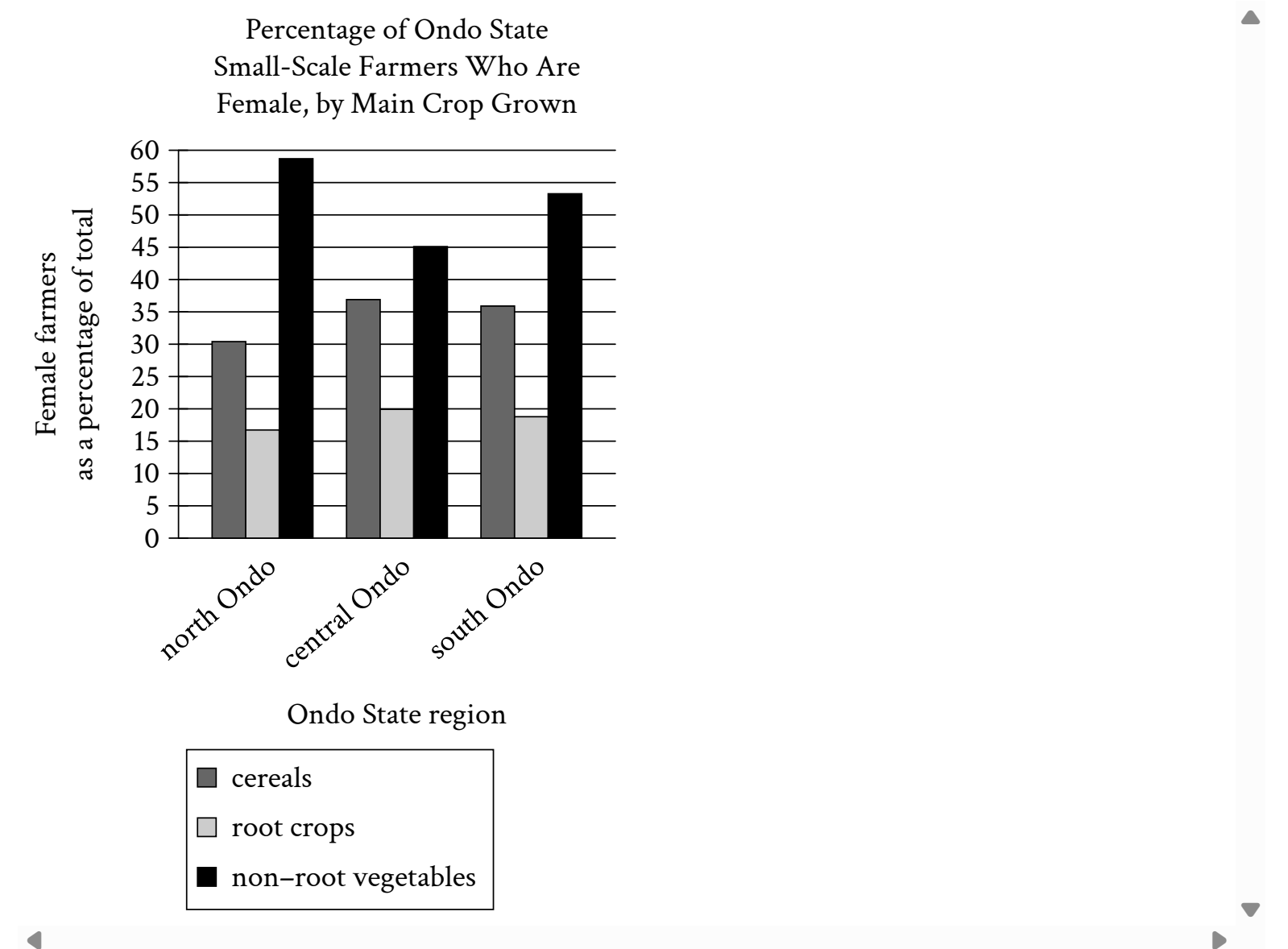
Which finding, if true, would most directly support the researchers’ hypothesis?

- A. Users who interacted with an ad were much more likely to do so by clicking on the ad’s “like” button than they were to interact with the ad in any other way.
- B. Users who interacted with an ad were significantly more likely to purchase the advertised product at the time they saw the ad than were users who saw the ad but did not interact with it.
- C. Compared with users who clicked on links in an ad, users who commented on that same ad were significantly more likely to remember seeing the ad when surveyed two days later.
- D. Although users who shared an ad were highly likely to remember details from the ad when surveyed two days later, those same users tended to forget those details when surveyed again a week later.

Question ID 73e904d4

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 73e904d4



Geographer Adebayo Oluwole Eludoyin and his colleagues surveyed small-scale farmers in three locations in Ondo State, Nigeria—which has mountainous terrain in the north, an urbanized center, and coastal terrain in the south—to learn more about their practices, like the types of crops they mainly cultivated. In some regions, female farmers were found to be especially prominent in the cultivation of specific types of crops and even constituted the majority of farmers who cultivated those crops; for instance,

- Which choice most effectively uses data from the graph to complete the example?
- A. most of the farmers who mainly cultivated cereals and most of the farmers who mainly cultivated non-root vegetables in south Ondo were women.

- B. more women in central Ondo mainly cultivated root crops than mainly cultivated cereals.
- C. most of the farmers who mainly cultivated non-root vegetables in north and south Ondo were women.
- D. a relatively equal proportion of women across the three regions of Ondo mainly cultivated cereals.

Question ID c54cf15b

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: c54cf15b

In the twentieth century, ethnographers made a concerted effort to collect Mexican American folklore, but they did not always agree about that folklore’s origins. Scholars such as Aurelio Espinosa claimed that Mexican American folklore derived largely from the folklore of Spain, which ruled Mexico and what is now the southwestern United States from the sixteenth to early nineteenth centuries. Scholars such as Américo Paredes, by contrast, argued that while some Spanish influence is undeniable, Mexican American folklore is mainly the product of the ongoing interactions of various cultures in Mexico and the United States.

Which finding, if true, would most directly support Paredes’s argument?

- A. The folklore that the ethnographers collected included several songs written in the form of a *décima*, a type of poem originating in late sixteenth-century Spain.
- B. Much of the folklore that the ethnographers collected had similar elements from region to region.
- C. Most of the folklore that the ethnographers collected was previously unknown to scholars.
- D. Most of the folklore that the ethnographers collected consisted of *corridos*—ballads about history and social life—of a clearly recent origin.

Question ID 0b1feef0

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 0b1feef0

Median Ages of First Marriage for Men and Women in the United States and in England and Wales, 1900–2000



A sociology student is reading an essay on the median age of first marriage in Western countries throughout the twentieth century. The author of the essay cites factors common to these countries that the author believes caused an increase in the median age of first marriage, such as new technologies that shortened the time needed for domestic chores, making two-person households less necessary and living alone more viable. The student asserts that beyond these factors there must be additional ones specific to particular Western countries that influenced the increase of age at first marriage.

- Which choice most effectively uses data from the graph that support the student’s assertion?
- A. Between 1970 and 2000, the median age of first marriage rose more sharply for men in England and Wales than it did for men in the United States.
 - B. The median age of first marriage for men in England and Wales was lower in 1970 than in 1950 or 1990.

- C. Between 1900 and 2000, the median age of first marriage for women in England and Wales was consistently higher than for women in the United States, as was the case for men.
- D. In England and Wales, the median age of first marriage was consistently higher for men than for women between 1900 and 2000, but this was not always the case in the United States.

Question ID 0ef811d9

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 0ef811d9

Early Earth is thought to have been characterized by a stagnant lid tectonic regime, in which the upper lithosphere (the outer rocky layer) was essentially immobile and there was no interaction between the lithosphere and the underlying mantle. Researchers investigated the timing of the transition from a stagnant lid regime to a tectonic plate regime, in which the lithosphere is fractured into dynamic plates that in turn allow lithospheric and mantle material to mix. Examining chemical data from lithospheric and mantle-derived rocks ranging from 285 million to 3.8 billion years old, the researchers dated the transition to 3.2 billion years ago.

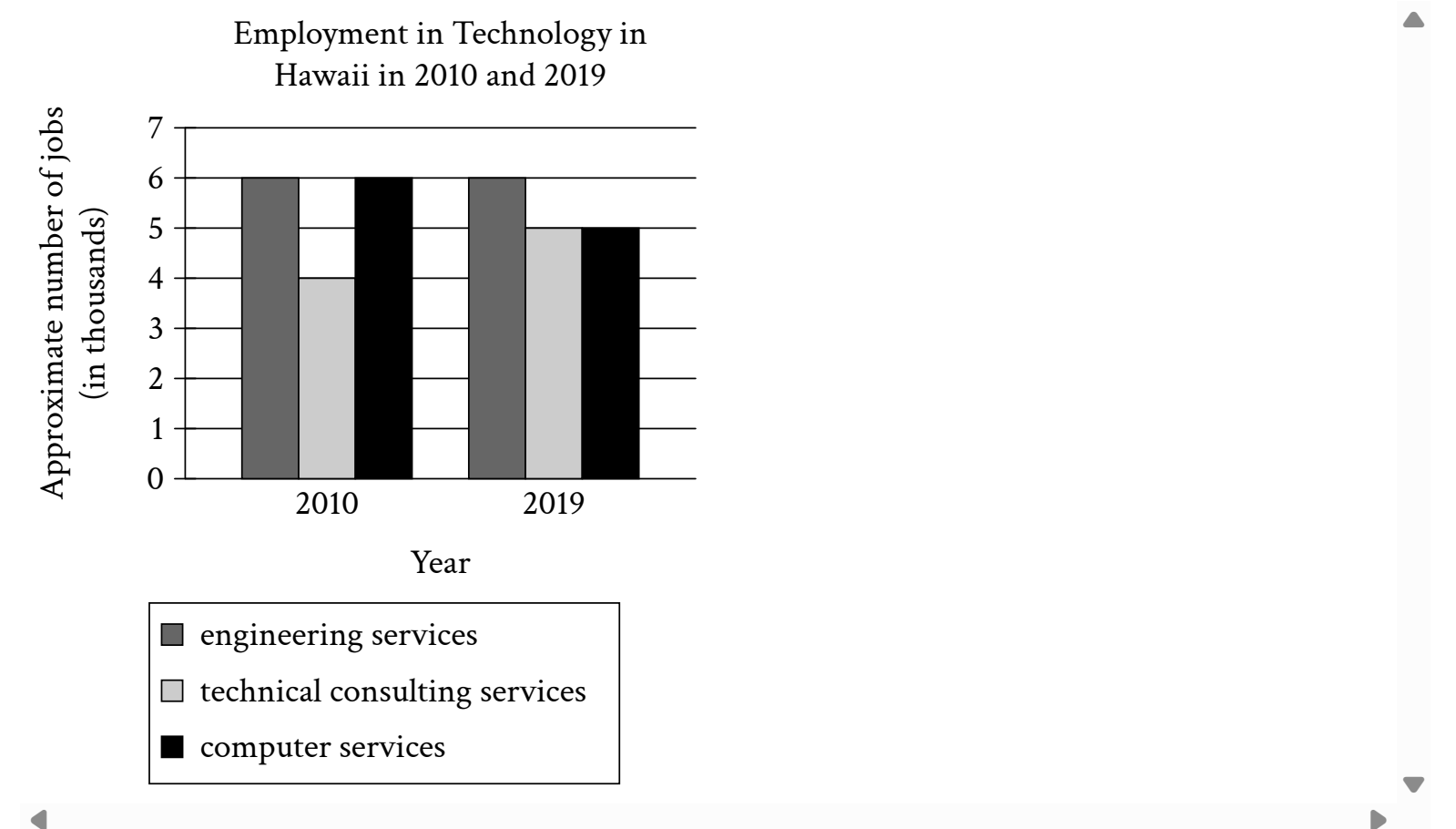
Which finding, if true, would most directly support the researchers’ conclusion?

- A. Among rocks known to be older than 3.2 billion years, significantly more are mantle derived than lithospheric, but the opposite is true for the rocks younger than 3.2 billion years.
- B. Mantle-derived rocks older than 3.2 billion years show significantly more compositional diversity than lithospheric rocks older than 3.2 billion years do.
- C. There is a positive correlation between the age of lithospheric rocks and their chemical similarity to mantle-derived rocks, and that correlation increases significantly in strength at around 3.2 billion years old.
- D. Mantle-derived rocks younger than 3.2 billion years contain some material that is not found in older mantle-derived rocks but is found in older and contemporaneous lithospheric rocks.

Question ID 73fc8271

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 73fc8271



A student in Hawaii is interested in pursuing a career in technology and decides to do some research on local trends. The student notices that the number of jobs in computer services in 2010 was _____

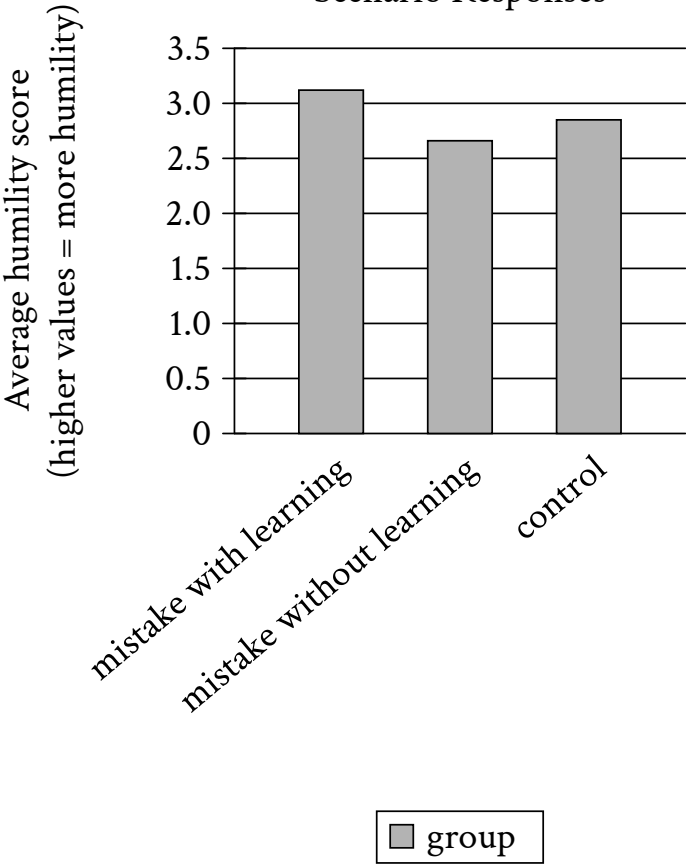
- Which choice most effectively uses data from the graph to complete the statement?
- A. higher than the number of jobs in technical consulting services, and in 2019 was about the same as the number of jobs in engineering services.
 - B. about the same as the number of jobs in engineering services, and in 2019 was about the same as the number of jobs in technical consulting services.
 - C. lower than the number of jobs in engineering services, but in 2019 was higher than the number of jobs in engineering services.
 - D. about the same as the number of jobs in technical consulting services, but in 2019 was lower than the number of jobs in technical consulting services.

Question ID 40582207

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 40582207

Humility Scores for Participants' Scenario Responses



Jia Hu and colleagues hypothesized that workplace leaders who reflect on lessons learned from past mistakes are likely to exhibit more humility than leaders who don't engage in such reflection. To test this, the team placed 301 managers in one of three groups. Participants in two experimental groups were asked to reflect on a mistake, one group focusing on a mistake that resulted in learning and the other group focusing on a mistake that didn't result in learning. Participants in a control group were asked to reflect on their daily routine. All the participants then described how they would respond to a workplace scenario. After evaluating the responses for evidence of humility, the researchers concluded that their hypothesis was correct.

Which choice best describes data in the graph that support the researchers' conclusion?

- A. None of the three groups' average humility scores exceeded 3.5.
- B. The managers in the control group exhibited only slightly less humility on average than the managers in the two experimental groups did.
- C. The managers who reflected on a past mistake that resulted in learning exhibited more humility on average than the managers in the other two groups did.

D. All three groups exhibited less humility on average than the researchers expected.

Question ID 1f56dfbb

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 1f56dfbb

“Mrs. Spring Fragrance” is a 1912 short story by Sui Sin Far. In the story, Mrs. Spring Fragrance, a Chinese immigrant living in Seattle, is traveling in California. In letters to her husband and friend, she demonstrates her concern for what’s happening at her home in Seattle while she is away: _____

Which quotation from Mrs. Spring Fragrance’s letters most effectively illustrates the claim?

- A. “My honorable cousin is preparing for the Fifth Moon Festival, and wishes me to compound for the occasion some American ‘fudge,’ for which delectable sweet, made by my clumsy hands, you have sometimes shown a slight prejudice.”
- B. “Next week I accompany Ah Oi to the beauteous town of San José. There will we be met by the son of the Illustrious Teacher.”
- C. “Forget not to care for the cat, the birds, and the flowers. Do not eat too quickly nor fan too vigorously now that the weather is warming.”
- D. “I am enjoying a most agreeable visit, and American friends, as also our own, strive benevolently for the accomplishment of my pleasure.”

Question ID d7e1dbac

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: d7e1dbac

Average Nitrate and Phosphate Concentrations in Seawater after Volcanic Eruption

Nutrient	Seawater in lava-affected area, 5–45 meters below surface	Seawater in lava-affected area, 75–125 meters below surface	Seawater outside of lava-affected area, 5–45 meters below surface	Seawater outside of lava-affected area, 75–125 meters below surface
Nitrate (micromoles per liter)	3.1	0.4	≤0.03	≤0.01
Phosphate (micromoles per liter)	0.17	0.09	0.14	0.06

After a volcanic eruption spilled lava into North Pacific Ocean waters, a dramatic increase of diatoms (a kind of phytoplankton) near the surface occurred. Scientists assumed the diatoms were thriving on nutrients such as phosphate from the lava, but analysis showed these nutrients weren't present near the surface in forms diatoms can consume. However, there was an abundance of usable nitrate, a nutrient usually found in much deeper water and almost never found in lava. Microbial oceanographer Sonya Dyhrman and colleagues believe that as the lava plunged nearly 300 meters below the surface it dislodged pockets of this nutrient, releasing it to float upward, given that _____

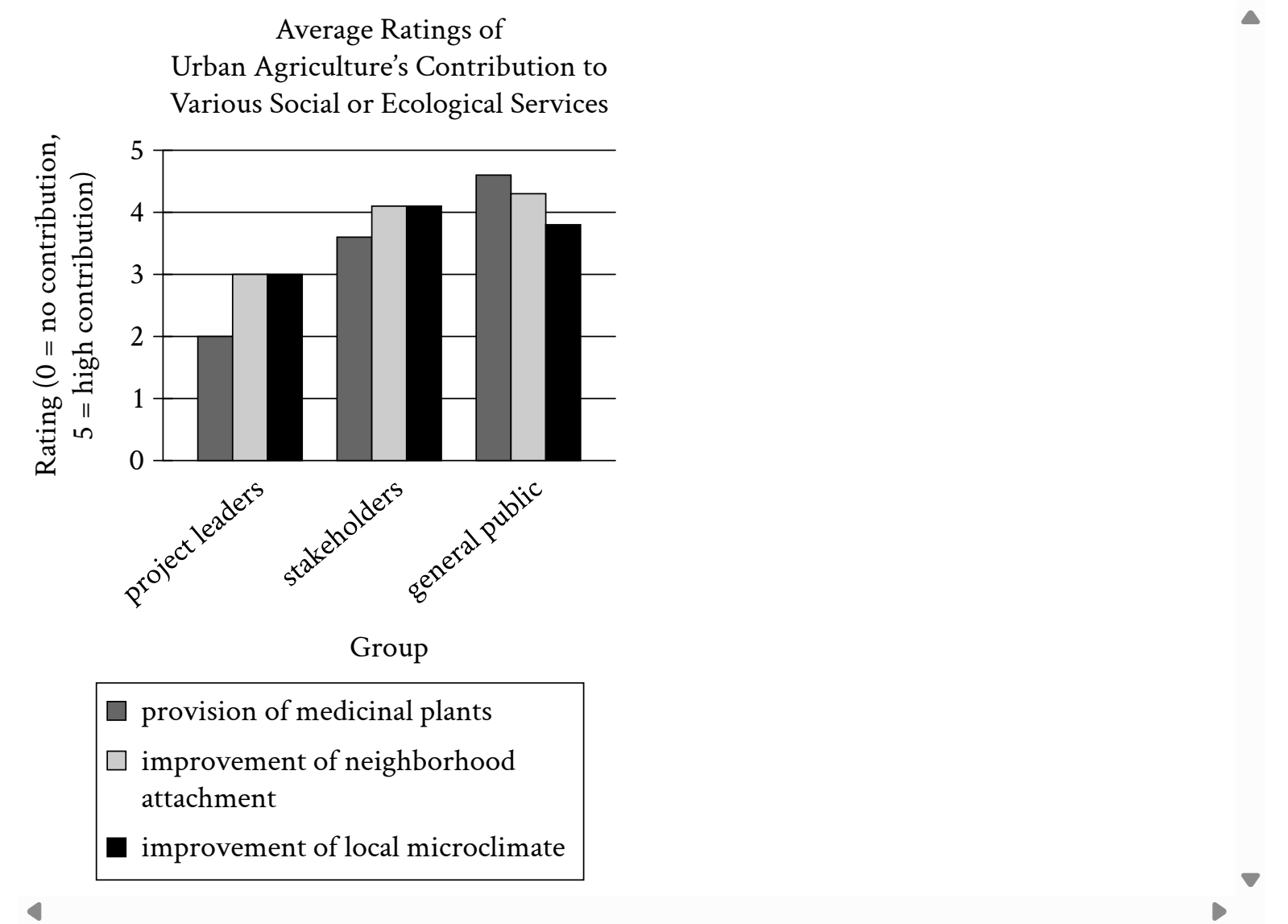
Which choice most effectively uses data from the table to complete the statement?

- A. at 5–45 meters below the surface, the average concentration of phosphate was about the same in the seawater in the lava-affected area as in the seawater outside of the lava-affected area.
- B. for both depth ranges measured, the average concentrations of nitrate were substantially higher in the seawater in the lava-affected area than in the seawater outside of the lava-affected area.
- C. for both depth ranges measured in the seawater in the lava-affected area, the average concentrations of nitrate were substantially higher than the average concentrations of phosphate.
- D. in the seawater outside of the lava-affected area, there was little change in the average concentration of nitrate from 75–125 meters below the surface to 5–45 meters below the surface.

Question ID a301a5e2

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: a301a5e2



Urban agriculture is the practice of growing plant- or animal-based products in urban settings such as community gardens and rooftop farms. Esther Sanyé-Mengual, Kathrin Specht, and their team surveyed three groups of people in Bologna, Italy—leaders of urban agriculture projects, stakeholders in urban agriculture (e.g., food researchers and urban farming associations), and the general public—to compare their views about the extent to which urban agriculture contributes to 25 social or ecological services that the team identified. The survey results show that, on average, project leaders rated urban agriculture as contributing less to

Which choice most effectively uses data from the graph to complete the assertion?

- A. providing medicinal plants than to improving the local microclimate.
- B. improving community members’ sense of attachment to the neighborhood than to offering educational opportunities.

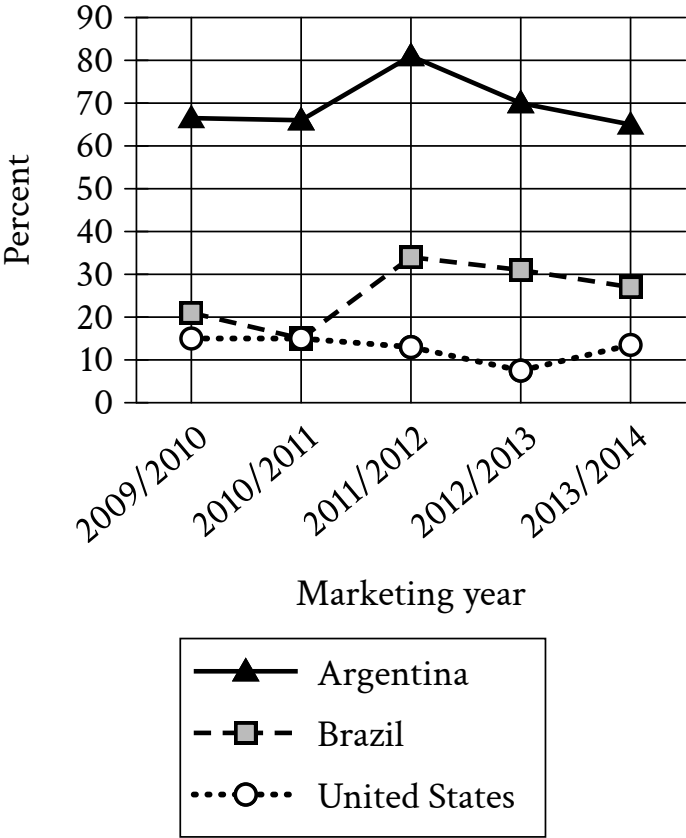
- C. improving the local microclimate than to providing medicinal plants.
- D. improving the local microclimate than to providing tourist attractions.

Question ID b25f59f7

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: b25f59f7

Percentage of Maize Exported
by Three Countries for Marketing
Years 2009/2010–2013/2014



Argentina, Brazil, and the United States are among the world’s leading producers of maize (corn), and each country exports a certain percentage of maize each marketing year, which runs from March to February in Argentina and Brazil and from September to August in the United States. A student is researching those percentages and finds that for the marketing year 2012/2013, the percentage of maize exported by _____

- Which choice most effectively uses data from the graph to complete the text?
- A. Brazil increased from the previous marketing year but remained lower than the percentage exported by the United States.
 - B. Brazil exceeded the percentage exported by Argentina for the first time.
 - C. Argentina decreased from the previous marketing year but remained the highest among the three countries.
 - D. the United States reached its highest point during the five marketing years.

Question ID df6497ac

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: df6497ac

In addition to her technical skill and daring feats, American stunt pilot Bessie Coleman was also known for dazzling the crowds that came to watch her air shows in the 1920s with her exuberant personality. During her career, she was careful and purposeful about how she crafted her public persona. An aviation researcher has claimed that Coleman intentionally defied social norms of the time by how she chose to present herself to the public.

Which quotation from an article about Coleman would most directly support the aviation researcher’s claim?

- A. “For her air shows, Coleman frequently used the Curtiss JN-4, or ‘Jenny,’ which at that time was one of the most well-known types of planes.”
- B. “While Coleman was beloved by spectators for her charisma, she had a more complicated relationship with her managers and staff, who at times found her behavior too impulsive and demanding.”
- C. “Coleman once considered leaving her career as a stunt pilot to focus her efforts on giving speeches, which she felt would better support her public image.”
- D. “Although female pilots were typically expected to wear traditional but impractical attire that included dresses or skirts, photographs of Coleman show her wearing pants and leather jackets.”

Question ID 11634e18

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 11634e18

“Often Rebuked, Yet Always Back Returning” is an 1846 poem by Emily Brontë. The poem conveys the speaker’s determination to experience the countryside around her: _____

Which quotation from the poem most effectively illustrates the claim?

- A. “Often rebuked, yet always back returning / To those first feelings that were born with me, / And leaving busy chase of wealth and learning / For idle dreams of things which cannot be.”
- B. “I’ll walk, but not in old heroic traces, / And not in paths of high morality, / And not among the half-distinguished faces, / The clouded forms of long-past history.”
- C. “I’ll walk where my own nature would be leading: / It vexes me to choose another guide: / Where the grey flocks in ferny glens are feeding; / Where the wild wind blows on the mountain side.”
- D. “To-day, I will seek not the shadowy region; / Its unsustaining vastness waxes drear; / And visions rising, legion after legion, / Bring the unreal world too strangely near.”

Question ID 3d8453ea

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 3d8453ea

Five of the Responses to Survey about Actions to Conserve Energy		
Action	Action category	Percentage of respondents selecting action (%)
Use efficient cars/hybrids	efficiency	2.8
Change thermostat setting	curtailment	6.3
Use bike or public transportation instead of car	curtailment	12.9
Use efficient light bulbs	efficiency	3.6
Turn off lights	curtailment	19.6

In a survey of public perceptions of energy use, researcher Shahzeen Attari and her team asked respondents to name the most effective action ordinary people can take to conserve energy. The team categorized each action as either an efficiency or a curtailment and found that respondents tended to name curtailments more often than they did efficiencies. For example, 19.6% of respondents stated that the most effective way to conserve energy is to turn off the lights, while only _____

Which choice most effectively uses data from the table to complete the text?

- A. 6.3% of respondents said it was most effective to use efficient cars or hybrids.
- B. 2.8% of respondents said it was most effective to change the thermostat setting.
- C. 12.9% of respondents said it was most effective to use a bike or public transportation.
- D. 3.6% of respondents said it was most effective to use efficient light bulbs.

Question ID cb016233

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: cb016233

In a series of experiments, Julio Sevilla and Claudia Townsend showed that manipulating the space between products in store displays can influence consumers’ views of those products. Participants in several of the experiments regarded the same products in the same (generic) retail settings as significantly more valuable when the product-to-space ratio was low than when it was high. But in one of the experiments, Sevilla and Townsend arranged the same jewelry with different levels of intervening space at an upscale retailer (Tiffany & Co.) and a relatively inexpensive retailer (Forever 21). The result of this experiment suggests that a store context associated with inexpensive products may moderate the effect Sevilla and Townsend observed in their other experiments.

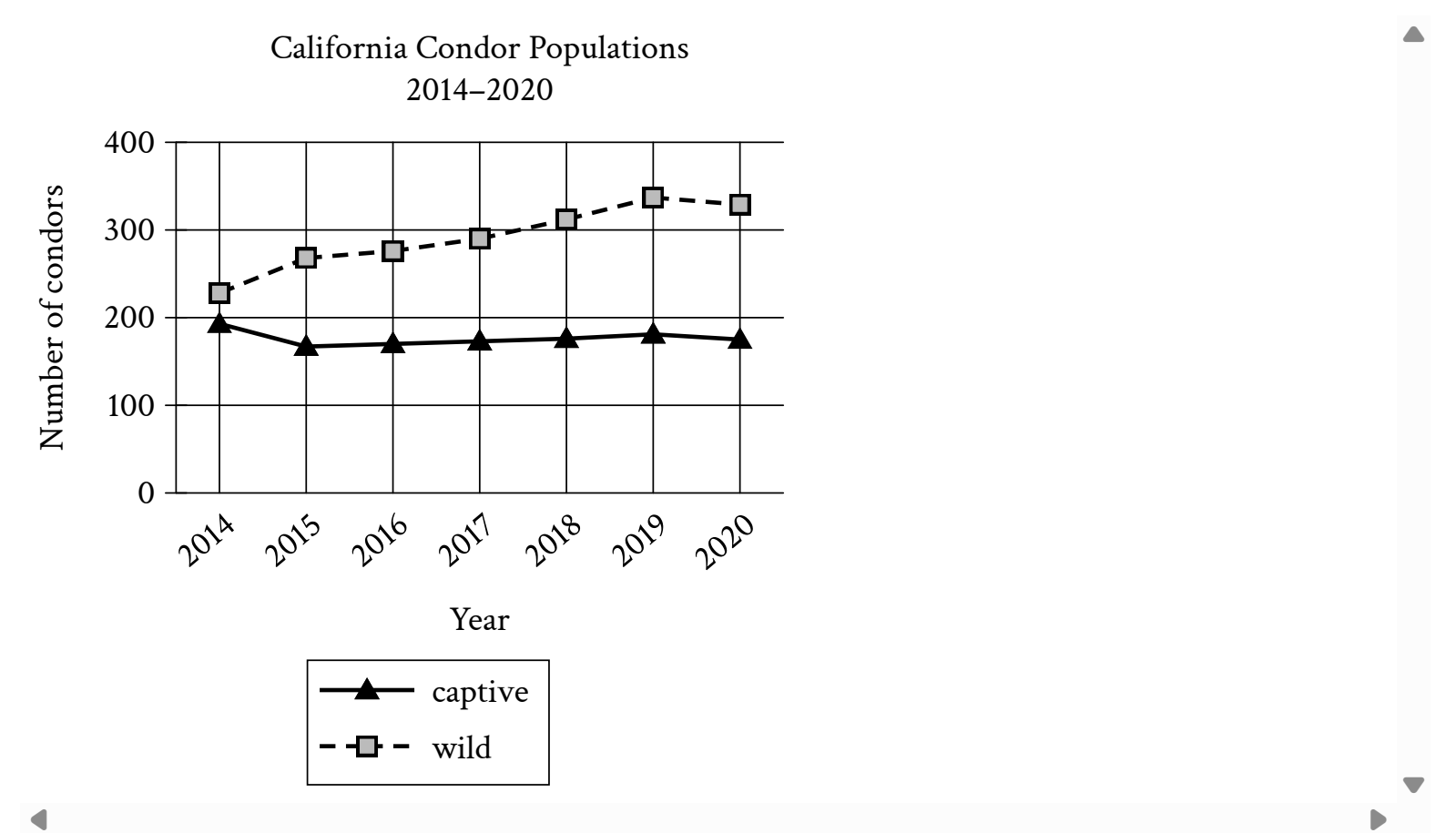
Which finding from the experiment with Tiffany & Co. and Forever 21, if true, would most directly support the conclusion presented in the text?

- A. At Tiffany & Co., participants judged jewelry spaced far apart to be substantially more valuable than jewelry spaced close together, but at Forever 21, participants judged jewelry spaced far apart to be only slightly more valuable than jewelry spaced close together.
- B. At both Tiffany & Co. and Forever 21, participants judged jewelry spaced far apart to be less valuable than jewelry spaced close together, but the difference in perceived value was significantly greater at Tiffany & Co. than at Forever 21.
- C. Participants judged jewelry spaced far apart at Tiffany & Co. to be similar in value to jewelry spaced far apart at Forever 21, but participants judged jewelry spaced close together at Tiffany & Co. to be more valuable than jewelry spaced close together at Forever 21.
- D. When jewelry was spaced far apart, participants judged the jewelry at Tiffany & Co. to be more valuable than the jewelry at Forever 21, but when jewelry was spaced close together, participants judged the jewelry at Tiffany & Co. to be less valuable than the jewelry at Forever 21.

Question ID 0767006b

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 0767006b



The California Condor Recovery Program is working to protect this large, rare American vulture from extinction. The program captured 27 wild condors in 1987 in order to protect and breed them. Captive birds have been reintroduced into the wild since 1992. Although the California condor is still a rare species, many biologists claim that the program has been reasonably successful.

Which choice best describes data from the graph that support the biologists’ claim?

- A. The number of captive California condors steadily decreased between 2014 and 2020.
- B. The numbers of California condors living both in captivity and in the wild decreased only slightly from 2019 to 2020.
- C. The difference between the number of captive and wild California condors remained relatively steady between 2014 and 2017.
- D. The number of wild California condors increased overall from 2014 to 2020 and exceeded the number of those living in captivity.

Question ID 7bdd4654

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 7bdd4654

The presence of other individuals of the same species has been observed to mitigate stress in highly social mammals. To investigate whether this phenomenon, known as social buffering, also occurs in reptiles, researchers led by Chelsea E. Martin monitored stress responses in wild southern Pacific rattlesnakes (*Crotalus helleri*) in three experimental treatments: when alone, with a rope, and with a companion *C. helleri*. The researchers compared the percent change between baseline and peak heart rate in response to a (harmless) disturbance, with higher values indicating higher stress levels.

Which finding, if true, would most directly support the idea that social buffering occurs among *C. helleri*?

- A. The average percent change in heart rate was lower among *C. helleri* with a companion than among solitary *C. helleri* and *C. helleri* with a rope.
- B. Average peak heart rates were highest among solitary *C. helleri*, but no differences were observed in average peak heart rates between *C. helleri* with a companion and *C. helleri* with a rope.
- C. *C. helleri* with a companion displayed a lower average baseline heart rate and lower average peak heart rate than did solitary *C. helleri* or *C. helleri* with a rope.
- D. Solitary *C. helleri* had higher average baseline heart rates than did *C. helleri* in the other treatments, but the average percent change in heart rate was smaller among solitary *C. helleri* than among *C. helleri* with a companion.

Question ID 018b3508

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 018b3508

Born in 1891 to a Quechua-speaking family in the Andes Mountains of Peru, Martín Chambi is today considered to be one of the most renowned figures of Latin American photography. In a paper for an art history class, a student claims that Chambi’s photographs have considerable ethnographic value—in his work, Chambi was able to capture diverse elements of Peruvian society, representing his subjects with both dignity and authenticity.

Which finding, if true, would most directly support the student’s claim?

- A. Chambi took many commissioned portraits of wealthy Peruvians, but he also produced hundreds of images carefully documenting the peoples, sites, and customs of Indigenous communities of the Andes.
- B. Chambi’s photographs demonstrate a high level of technical skill, as seen in his strategic use of illumination to create dramatic light and shadow contrasts.
- C. During his lifetime, Chambi was known and celebrated both within and outside his native Peru, as his work was published in places like Argentina, Spain, and Mexico.
- D. Some of the peoples and places Chambi photographed had long been popular subjects for Peruvian photographers.

Question ID bd37ecaa

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: bd37ecaa

“Loon Point” is a 1912 poem by Amy Lowell. In the poem, which presents a nighttime scene on a body of water, Lowell describes an element of nature as an active participant in the experience, writing, _____

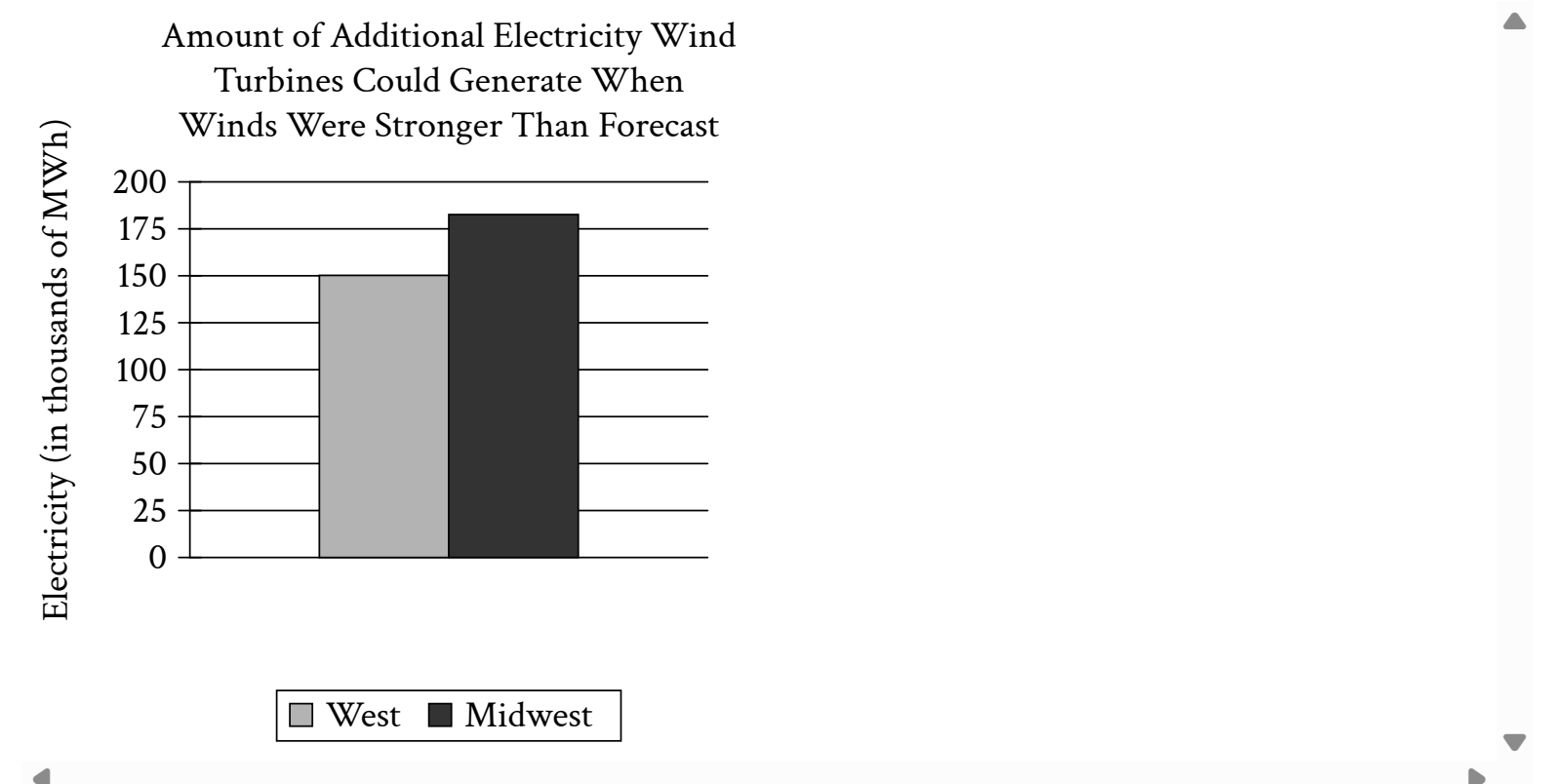
Which quotation from “Loon Point” most effectively illustrates the claim?

- A. “Through the water the moon writes her legends / In light, on the smooth, wet sand.”
- B. “Softly the water ripples / Against the canoe’s curving side.”
- C. “Or like the snow-white petals / Which drop from an overblown rose.”
- D. “But the moon in her wayward beauty / Is ever and always the same.”

Question ID 5ed70699

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 5ed70699



Electric companies that use wind turbines rely on weather forecasts to predict the maximum amount of power, in megawatt-hours (MWh), they can generate using wind so that they can determine how much they'll need to generate from other sources. When winds are stronger than they were forecast to be, however, the predicted maximum amount of electricity wind turbines could generate will be too low. For example, the graph shows that for the West region, the winds were _____

- Which choice most effectively uses data from the graph to complete the example?
- A. strong enough to generate about 150 thousand more MWh of electricity from wind turbines.
 - B. so weak that the electricity from wind turbines was about 175 thousand MWh less than predicted.
 - C. so weak that the electricity from wind turbines was about 150 thousand MWh less than predicted.
 - D. strong enough to generate about 175 thousand more MWh of electricity from wind turbines.

Question ID bec04f6a

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: bec04f6a

Three Studies' Estimated Average Velocity of LMC

Researchers	Study year	Estimated average velocity
Murai and Fujimoto	1980	344 km/s
Kallivayalil and colleagues	2006	378 km/s
Gardiner and colleagues	1994	297 km/s

In 2006, Nitya Kallivayalil and colleagues calculated the most accurate estimate yet of the average velocity (in kilometers per second) of the Large Magellanic Cloud (LMC) galaxy. Before the 2006 study, estimates of the average velocity were low enough for the LMC to maintain an orbit around the Milky Way galaxy, but according to an analysis by Gurtina Besla and colleagues, the estimated velocity from the 2006 study is too high for the LMC to maintain such an orbit. Therefore, if Besla and colleagues are correct, the maximum average velocity for the LMC that would allow it to maintain orbit around the Milky Way is likely _____

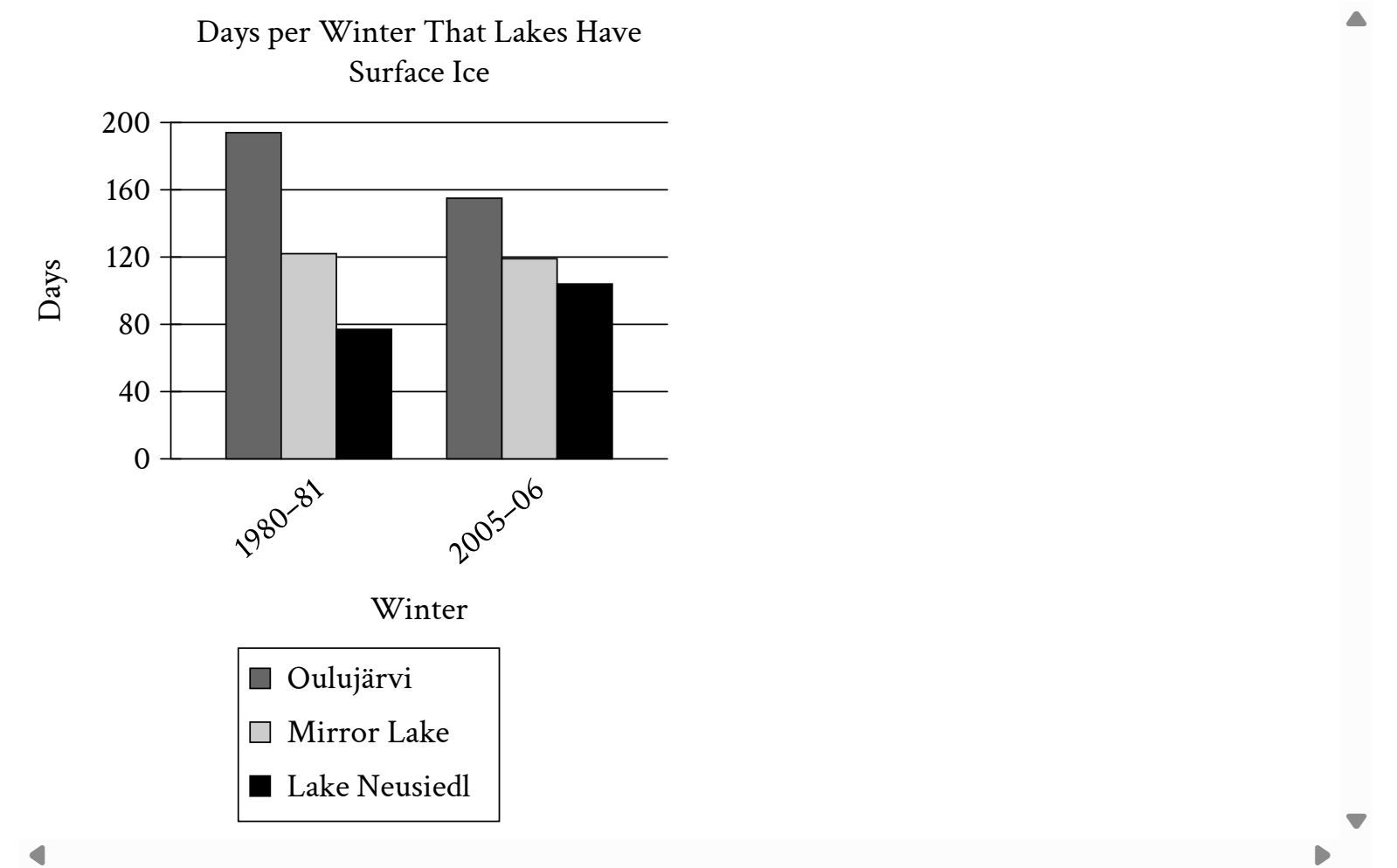
Which choice most effectively uses data from the table to complete the statement?

- A. above 344 km/s but below 378 km/s.
- B. above 297 km/s but below 344 km/s.
- C. above 378 km/s.
- D. below 297 km/s.

Question ID 4c83517e

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 4c83517e



It is common for freshwater lakes near or above a latitude of 45° north of the equator, like Lake Mjøsa in Norway, to accumulate surface ice in winter. The amount and duration of ice depends on many factors, including local weather conditions as well as the lake’s depth, volume, and surface area, but a climate researcher claims that some lakes in these latitudes have seen a decline in the duration of ice between the early 1980s and the mid-2000s. She cites as a typical example _____

Which choice most effectively uses data from the graph to complete the researcher’s example?

- A. both Lake Neusiedl and Oulujärvi, which had fewer than 195 days of ice in the winter of 1980–81.
- B. Lake Neusiedl, which had more days of ice in the winter of 2005–06 than it did in the winter of 1980–81.
- C. Oulujärvi, which had fewer days of ice in the winter of 2005–06 than it did in the winter of 1980–81.
- D. both Lake Neusiedl and Oulujärvi, which had more than 105 days of ice in the winter of 2005–06.

Question ID 19d3f40d

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 19d3f40d

Archaeologists have held that the Casarabe culture, which emerged in the southwestern Amazon basin in the first millennium CE, was characterized by a sparse, widely distributed population and little intervention in the surrounding wilderness. Recently, however, archaeologist Heiko Prümers and colleagues conducted a study of the region using remote-sensing technology that enabled them to create three-dimensional images of the jungle-covered landscape from above, and the researchers concluded that the Casarabe people developed a form of urbanism in the Amazon basin.

- Which finding about the remote-sensing images, if true, would most directly support Prümers and colleagues’ conclusion?
- A. They show shapes consistent with widely separated settlements of roughly equal small size surrounded by uncultivated jungle.
 - B. They show shapes consistent with long-distance footpaths running from Casarabe territories to large cities outside the region inhabited by the Casarabe people.
 - C. They show shapes consistent with scattered small farms created by clearing jungle areas near sources of fresh water.
 - D. They show shapes consistent with monumental platforms and dense central settlements linked to smaller settlements by a system of canals and roadways.

Question ID 8db9c8ee

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 8db9c8ee

A student performs an experiment testing her hypothesis that a slightly acidic soil environment is more beneficial for the growth of the plant *Brassica rapa parachinensis* (a vegetable commonly known as choy sum) than a neutral soil environment. She plants sixteen seeds of choy sum in a mixture of equal amounts of coffee grounds (which are highly acidic) and potting soil and another sixteen seeds in potting soil without coffee grounds as the control for the experiment. The two groups of seeds were exposed to the same growing conditions and monitored for three weeks.

Which finding, if true, would most directly weaken the student’s hypothesis?

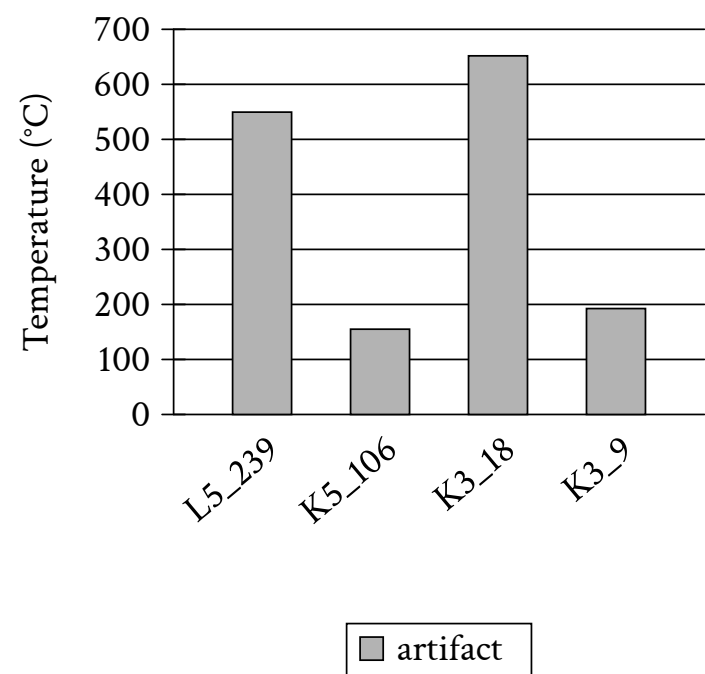
- A. The choy sum planted in the soil without coffee grounds were significantly taller at the end of the experiment than the choy sum planted in the mixture of soil and coffee grounds.
- B. The choy sum grown in the soil without coffee grounds weighed significantly less at the end of the experiment than the choy sum grown in the mixture of soil and coffee grounds.
- C. The choy sum seeds planted in the soil without coffee grounds sprouted significantly later in the experiment than did the seeds planted in the mixture of soil and coffee grounds.
- D. Significantly fewer of the choy sum seeds planted in the soil without coffee grounds sprouted plants than did the seeds planted in the mixture of soil and coffee grounds.

Question ID 388069c6

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 388069c6

Estimated Temperatures to which
Evron Quarry Artifacts Were Exposed



Flint artifacts dating to 800,000 to 1,000,000 years ago have been recovered from the Evron Quarry in Israel. Likely created by the hominin *Homo erectus*, the artifacts have no visual features suggesting that they were exposed to fire, leading some scholars to conclude that these hominins had not acquired control of fire. But Zane Stepka and colleagues recently used a new method to determine whether these artifacts had been exposed to temperatures above 400°C (the typical temperature campfires reach) and concluded that the hominins who inhabited the site may have had control of fire.

Which choice best describes data in the graph that support the team’s conclusion?

- A. Artifacts K5_106 and K3_9 were exposed to temperatures above 400°C.
- B. Artifacts L5_239 and K3_18 were exposed to temperatures of approximately 550°C and 650°C, respectively.
- C. All of the artifacts were exposed to temperatures above 100°C.
- D. Artifact K3_9 was exposed to a higher temperature than was artifact K5_106.

Question ID 8db96060

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 8db96060

Plants like potatoes, tomatoes, and soybeans are susceptible to bacterial wilt disease caused by the bacteria *Ralstonia solanacearum*. A multinational team of scientists led by Zhong Wei studied whether other microbes in the soil might influence the degree to which plants are affected by the disease. The team sampled soil surrounding individual tomato plants over time and compared the results of plants that became diseased with those that remained healthy. They concluded that the presence of certain microbes in the soil might explain the difference between healthy and diseased plants.

Which finding, if true, would most directly support the team’s conclusion?

- A. The soil surrounding healthy plants contained significantly higher concentrations of microbes known to inhibit *Ralstonia solanacearum* than the soil surrounding diseased plants did.
- B. The soil surrounding the plants contained high concentrations of *Ralstonia solanacearum* regardless of whether the plants were affected by wilt disease.
- C. The soil surrounding healthy plants tended to have significantly higher moisture levels than the soil surrounding diseased plants did.
- D. By the end of the experiment, over half the plants had been affected by wilt disease regardless of differences in the types and concentrations of microbes in the surrounding soil.

Question ID a0c38e0b

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: a0c38e0b

Properties of Select Rotating Radio Transients

Name	Right ascension (hours)	Period (seconds)	Frequency (hertz)
J0545-03	5:45	1.074	0.931
J1654-2335	16:54:03	0.545	1.834
J0103+54	1:03:37	0.354	2.822
J0121+53	1:21	2.725	0.367
J0614-03	6:15	0.136	7.353

A student is researching rotating radio transients (RRATs), a subclass of pulsar stars characterized by short pulses of radio waves. The time between consecutive pulses of an RRAT is referred to as a period. Looking at the table, the student determines that _____

Which choice most effectively uses data from the table to complete the statement?

- A. J0614-03 has the shortest amount of time between consecutive pulses of all the RRATs in the table.
- B. J0545-03 and J0121+53 have the same amount of time between consecutive pulses.
- C. J1654-2335 has the longest amount of time between consecutive pulses of all the RRATs in the table.
- D. J0103+54 and J0121+53 both have more than one second of time between consecutive pulses.

Question ID 79809ef0

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 79809ef0

Icebergs generally appear to be mostly white or blue, depending on how the ice reflects sunlight. Ice with air bubbles trapped in it looks white because much of the light reflects off the bubbles. Ice without air bubbles usually looks blue because the light travels deep into the ice and only a little of it is reflected. However, some icebergs in the sea around Antarctica appear to be green. One team of scientists hypothesized that this phenomenon is the result of yellow-tinted dissolved organic carbon in Antarctic waters mixing with blue ice to produce the color green.

Which finding, if true, would most directly weaken the team’s hypothesis?

- A. White ice doesn’t change color when mixed with dissolved organic carbon due to the air bubbles in the ice.
- B. Dissolved organic carbon has a stronger yellow color in Antarctic waters than it does in other places.
- C. Blue icebergs and green icebergs are rarely found near each other.
- D. Blue icebergs and green icebergs contain similarly small traces of dissolved organic carbon.

Question ID 4339eb9c

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 4339eb9c

Although it’s clear that Mars once had liquid water on its surface, astronomers have debated whether the evidence of ancient water reflects a prolonged phase of warm, wet conditions—the so-called wet and warm scenario—or a brief period of melting in an otherwise consistently frozen environment. Researchers Benjamin T. Cardenas and Michael P. Lamb recently added to this debate by using data from NASA and the Mars Orbiter Laser Altimeter to map the topography of what is now a large basin in Mars’s northern hemisphere. Cardenas and Lamb concluded that the wet and warm scenario is likely correct.

Which finding about the basin, if true, would most directly support Cardenas and Lamb’s conclusion?

- A. Its dimensions and shape indicate that it is unlikely to have formed as the result of an asteroid or comet impact.
- B. It has features suggesting that it once held an ocean that underwent gradual sea-level changes over an extended time.
- C. Its physical characteristics are most consistent with it having formed as a result of a massive but short-lived influx of liquid water.
- D. It is surrounded by channels that could have been formed either by running water or by flowing lava.

Question ID 74d5b39d

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 74d5b39d

The Land of Enchantment is a 1906 travel book by Lilian Whiting. In the book, which describes the experience of traveling through the southwestern United States by train, Whiting reflects on the escape from everyday life that such a journey provides: _____

Which quotation from *The Land of Enchantment* most effectively illustrates the claim?

- A. "The opportunities and advantages already offered and constantly increasing are greater than would at first be considered possible."
- B. "The social and the picturesque charm of the long journey is singularly enhanced by the leisurely stops made for refreshment."
- C. "The real journey begins, of course, at Chicago, and as these trains leave in the evening the traveller fares forth in the seclusion of his berth."
- D. "One experiences a certain sense of detachment from ordinary day and daylight duties that is exhilarating."

Question ID 1df549b4

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 1df549b4

Properties of TRAPPIST-1 Exoplanets Compared to Earth's Properties

Planet	Orbital period (days)	Planet radius (Earth radii)
Earth	365.26	1
TRAPPIST-1b	1.51	1.09
TRAPPIST-1d	4.05	0.77
TRAPPIST-1e	6.1	0.92
TRAPPIST-1f	9.21	1.04

TRAPPIST-1 is a planetary system with a central red dwarf star and several Earth-sized exoplanets. Each planet in this system is so close in orbit to the star that the gravitational forces acting between the planet and the star cause the planet’s rotational period around its axis and orbital period around the star to be equal. For example, the orbital period of TRAPPIST-1e is _____

Which choice most effectively uses data from the table to complete the example?

- A. 1.51 days, which is the shortest rotational period of any of the TRAPPIST planets.
- B. 6.1 days, and its rotational period is also 6.1 days.
- C. 9.21 days, which is the same as the rotational period of TRAPPIST-1f.
- D. 6.1 days, and its rotational period is 0.92 days.

Question ID 473a21a7

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 473a21a7

Fish whose DNA has been modified to include genetic material from other species are known as transgenic. Some transgenic fish have genes from jellyfish that result in fluorescence (that is, they glow in the dark). Although these fish were initially engineered for research purposes in the 1990s, they were sold as pets in the 2000s and can now be found in the wild in creeks in Brazil. A student in a biology seminar who is writing a paper on these fish asserts that their escape from Brazilian fish farms into the wild may have significant negative long-term ecological effects.

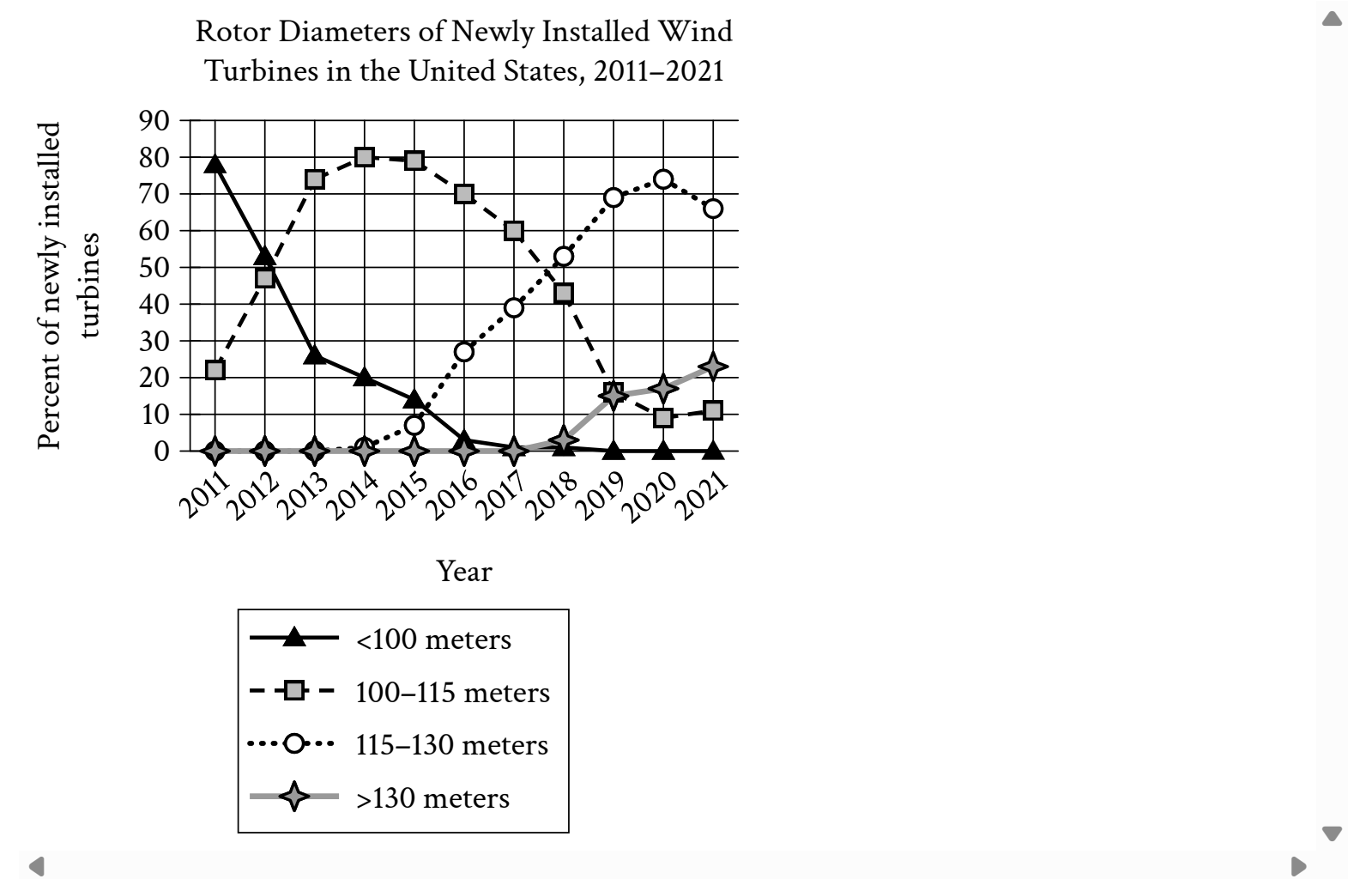
Which quotation from a researcher would best support the student’s assertion?

- A. “In one site in the wild where transgenic fish were observed, females outnumbered males, while in another the numbers of females and males were equivalent.”
- B. “Though some presence of transgenic fish in the wild has been recorded, there are insufficient studies of the impact of those fish on the ecosystems into which they are introduced.”
- C. “The ecosystems into which transgenic fish are known to have been introduced may represent a subset of the ecosystems into which the fish have actually been introduced.”
- D. “Through interbreeding, transgenic fish might introduce the trait of fluorescence into wild fish populations, making those populations more vulnerable to predators.”

Question ID 6f7e22d0

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div></div> <div></div> <div></div>

ID: 6f7e22d0



All other things being equal, the larger a wind turbine’s rotor diameter (the diameter of the imaginary circle swept by the turbine’s rotating blades), the greater amount of energy the turbine can generate. In a research paper on wind power, a student claims that in the United States, the amount of energy generated per newly installed turbine increased substantially between 2011 and 2021.

Which choice best describes data in the graph that support the student’s claim?

- A. No turbines installed in 2011 had rotor diameters greater than 115 meters, whereas the majority of turbines installed in 2021 had rotor diameters greater than 130 meters.
- B. Most turbines installed in 2011 had rotor diameters of less than 100 meters, whereas most turbines installed in 2021 had rotor diameters of at least 115 meters.
- C. In 2011, nearly 80% of turbines installed had rotor diameters of less than 100 meters, whereas only a little more than 20% of turbines installed that year had rotor diameters of 100–115 meters.

D. The percentage of newly installed turbines with rotor diameters greater than 130 meters increased every year between 2011 and 2021.

Question ID 50cd34a8

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 50cd34a8

Employment by Sector in France and the United States, 1800–2012 (% of total employment)

Year	Agriculture in France	Manufacturing in France	Services in France	Agriculture in US	Manufacturing in US	Services in US
1800	64	22	14	68	18	13
1900	43	29	28	41	28	31
1950	32	33	35	14	33	53
2012	3	21	76	2	18	80

Rows in table may not add up to 100 due to rounding.

Over the past two hundred years, the percentage of the population employed in the agricultural sector has declined in both France and the United States, while employment in the service sector (which includes jobs in retail, consulting, real estate, etc.) has risen. However, this transition happened at very different rates in the two countries. This can be seen most clearly by comparing the employment by sector in both countries in _____

Which choice most effectively uses data from the table to complete the statement?

- A. 1900 with the employment by sector in 1950.
- B. 1800 with the employment by sector in 2012.
- C. 1900 with the employment by sector in 2012.
- D. 1800 with the employment by sector in 1900.

Question ID 117629bc

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 117629bc

“John of God, the Water-Carrier” is a 1913 short story by María Cristina Mena. In the story, the narrator presents John as being a hard worker who is fully dedicated to his job as water carrier, or *aguador*: _____

Which quotation from “John of God, the Water-Carrier” most effectively illustrates the claim?

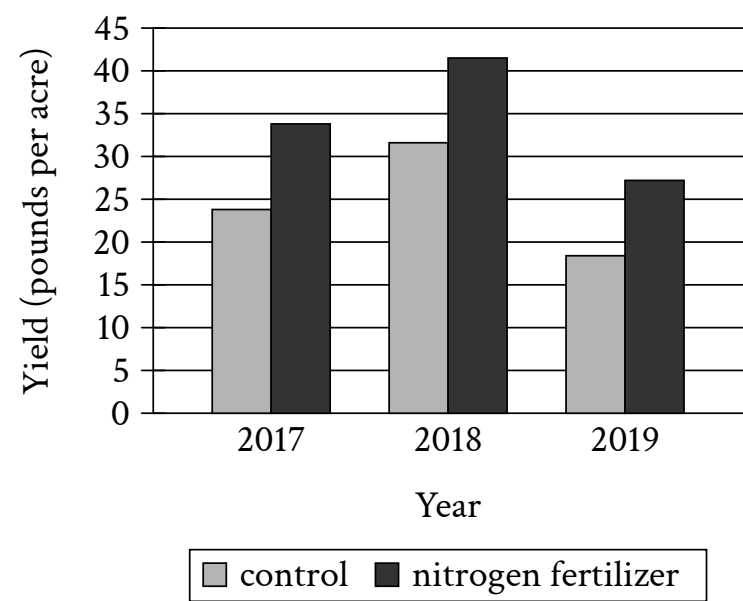
- A. “Very happy, he would jog home, the heavy silver pieces in his leather pockets making a discreet and dulcet ‘*trink-trak*’ between his jugs and his body.”
- B. “He learned that the city *aguador* may not blow his whistle to halt the traffic while he gravely crosses the street, but must wait for the passing of many vehicles, some with horses and some outlandishly without.”
- C. “From early morn to the fall of the afternoon he would go from fountain to fountain and from portal to portal, his lean body so accustomed to bending that he never thought of straightening it, his head bowed as if in prayer.”
- D. “When his first jugs had worn out—the sweet-scented, porous red clay becomes perforated in time—he had buried them to their necks in the corner where he slept, and they were now his treasury.”

Question ID b4e2a3a9

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: b4e2a3a9

Cantaloupe Yield



To test the effects of a nitrogen fertilizer on cantaloupe production, researchers grew cantaloupe plants and harvested their fruit over three years. In each year, half the plants were grown using a nitrogen fertilizer, and the other half were grown using a control fertilizer that contained no nitrogen. The researchers concluded that the nitrogen fertilizer increases cantaloupe yield.

Which choice best describes data in the graph that support the researchers' conclusion?

- A. In every year of the experiment, plants treated with the nitrogen fertilizer had a yield of at least 30 pounds per acre.
- B. In every year of the experiment, plants treated with the nitrogen fertilizer had a greater yield than did plants treated with the control fertilizer.
- C. The 2018 yield for plants treated with the control fertilizer was greater than was the 2019 yield for plants treated with the nitrogen fertilizer.
- D. The yield for plants treated with the nitrogen fertilizer increased from 2017 to 2018.

Question ID 568dd356

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 568dd356

Researchers hypothesized that a decline in the population of dusky sharks near the mid-Atlantic coast of North America led to a decline in the population of eastern oysters in the region. Dusky sharks do not typically consume eastern oysters but do consume cownose rays, which are the main predators of the oysters.

- Which finding, if true, would most directly support the researchers’ hypothesis?
- A. Declines in the regional abundance of dusky sharks’ prey other than cownose rays are associated with regional declines in dusky shark abundance.
 - B. Eastern oyster abundance tends to be greater in areas with both dusky sharks and cownose rays than in areas with only dusky sharks.
 - C. Consumption of eastern oysters by cownose rays in the region substantially increased before the regional decline in dusky shark abundance began.
 - D. Cownose rays have increased in regional abundance as dusky sharks have decreased in regional abundance.

Question ID 20b53829

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 20b53829

Characteristics of Five Recently Discovered Gas Exoplanets

Exoplanet designation	Mass (Jupiters)	Radius (Jupiters)	Orbital period (days)	Distance from the Sun (parsecs)
TOI-640 b	0.88	1.771	5.003	340
TOI-1601 b	0.99	1.239	5.331	336
TOI-628 b	6.33	1.060	3.409	178
TOI-1478 b	0.85	1.060	10.180	153
TOI-1333 b	2.37	1.396	4.720	200

“Hot Jupiters” are gas planets that have a mass of at least 0.25 Jupiters (meaning that their mass is at least 25% of that of Jupiter) and an orbital period of less than 10 days (meaning that they complete one orbit around their star in less than 10 days), while “warm Jupiters” are gas planets that meet the same mass criterion but have orbital periods of more than 10 days. In 2021, Michigan State University astronomer Joseph Rodriguez and colleagues announced the discovery of five new gas exoplanets and asserted that four are hot Jupiters and one is a warm Jupiter.

Which choice best describes data from the table that support Rodriguez and colleagues’ assertion?

- A. None of the planets have an orbital period of more than 10 days, and TOI-628 b has a mass of 6.33 Jupiters.
- B. TOI-1478 b has an orbital period of 153 days, and the masses of all the planets range from 0.85 to 6.33 Jupiters.
- C. All the planets have a radius between 1.060 and 1.771 Jupiters, and only TOI-1333 b has an orbital period of more than 10 days.
- D. Each of the planets has a mass greater than 0.25 Jupiters, and all except for TOI-1478 b have an orbital period of less than 10 days.

Question ID 48a3293e

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 48a3293e

ALSOL is a microcredit program in Mexico that makes small loans to female entrepreneurs who lack the collateral and credit history to secure financing from conventional banks. Borrowers use their business proceeds to repay loans in equal weekly installments and incur no penalty for missed payments other than lack of access to larger loans. Economists Gustavo Barboza and Sandra Trejos analyzed ALSOL data and found that rural borrowers, who mostly make and sell handicrafts, miss payments more often than urban borrowers do, partly because they sell their goods less frequently than they could. Barboza and Trejos claim that this behavior reflects strategic decisions that enable rural women to increase their profits per unit sold.

Which finding, if true, would most directly support Barboza and Trejos’s claim?

- A. Many marketplaces require entrepreneurs to pay marketplace operators a fixed percentage of each day’s proceeds in exchange for permission to sell goods there.
- B. Rural entrepreneurs can typically sell their goods for higher prices in cities than in their home areas, but the number of people selling competing goods tends to be higher in cities.
- C. Due to the lower costs they incur, rural entrepreneurs tend to require smaller initial loans than urban entrepreneurs do.
- D. The cost to rural entrepreneurs to bring their goods to towns with marketplaces is high but largely independent of the number of goods they bring.

Question ID de13d3f5

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: de13d3f5

The Intertropical Convergence Zone (ITCZ), a band of clouds that encircles Earth in the tropics and is a major rainfall source, shifts position in response to temperature variations across Earth’s hemispheres. Data from Huagapo Cave in Peru suggest the ITCZ shifted south during the Little Ice Age (circa 1300–1850), but a shift as far into South America as Huagapo should have led to dry conditions in Central America, which is inconsistent with climate models. To resolve the issue, geologist Yemane Asmerom and colleagues collected data from Yok Balum Cave in Central America and compared them with the Huagapo data. They concluded that during the Little Ice Age, the ITCZ may have expanded northward and southward rather than simply shifted.

Which finding from Asmerom and colleagues’ study, if true, would most directly support their conclusion?

- A. Neither the Yok Balum data nor the Huagapo data show significant local variations in temperature during the Little Ice Age.
- B. Both the Yok Balum data and the Huagapo data show increased temperatures and prolonged dry conditions during the Little Ice Age.
- C. The Yok Balum data show prolonged dry conditions during the same portions of the Little Ice Age in which the Huagapo data show heightened levels of rainfall.
- D. The Yok Balum data and the Huagapo data show strongly correlated patterns of high rainfall during the Little Ice Age.

Question ID af3cbcd8

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: af3cbcd8

“To You” is an 1856 poem by Walt Whitman. In the poem, Whitman suggests that he deeply understands the reader, whom he addresses directly, writing, _____

Which quotation from “To You” most effectively illustrates the claim?

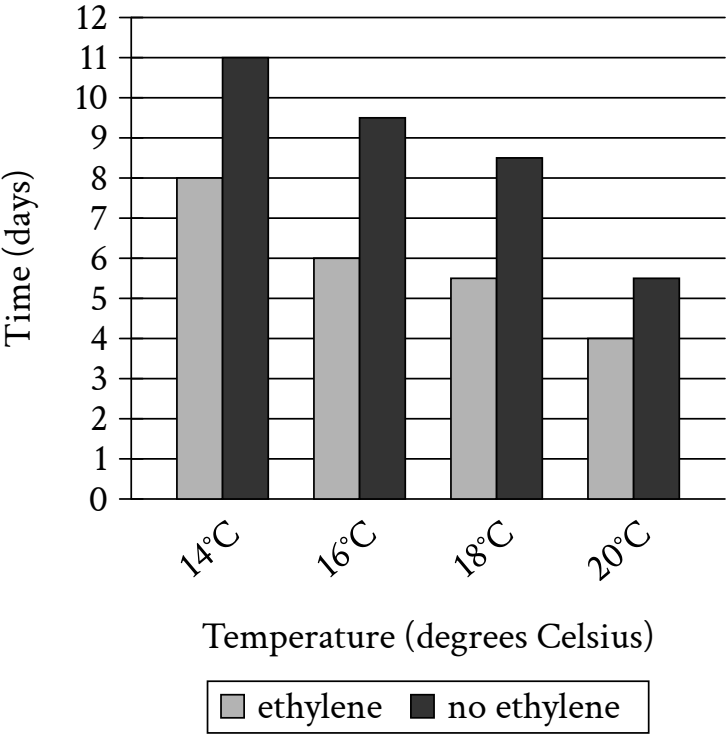
- A. “Your true soul and body appear before me.”
- B. “Whoever you are, now I place my hand upon you, that you be my poem.”
- C. “I should have made my way straight to you long ago.”
- D. “Whoever you are, I fear you are walking the walks of dreams.”

Question ID 4b524463

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 4b524463

Banana Ripening Time at Different Temperatures with and without Ethylene Treatment



A student is conducting an experiment to test the effect of temperature and ethylene treatment on the ripening speed of bananas. The student treated some bananas with ethylene while leaving others untreated, then allowed both types of bananas to ripen at one of four different temperatures. Comparing the data for bananas with and without ethylene, the student concluded that _____

Which choice most effectively uses data from the graph to complete the student’s conclusion?

- A. 20°C is the ideal temperature at which to store bananas to slow ripening time.
- B. for those bananas that were not treated with ethylene, differences in temperature were not associated with absolute differences in ripening time.
- C. bananas treated with ethylene ripen faster at 14°C and 16°C than at 18°C and 20°C.
- D. ethylene was associated with a greater absolute change in ripening time at 14°C, 16°C, and 18°C than at 20°C.

Question ID c3c85eb7

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: c3c85eb7

As a monthly newsletter formed in 1969 by a group of Asian American students at the University of California, Los Angeles, *Gidra* helped raise awareness about social and political issues concerning the Asian American community on campus and at large. The newsletter had an expansive reach for a publication of its kind: around 4,000 copies were published each month. A student writing a history paper, however, hypothesizes that *Gidra*’s influence cannot be measured by the number of newsletters published monthly alone.

Which finding, if true, would most directly support the student’s hypothesis?

- A. The students who initially formed *Gidra* each contributed financially to its creation.
- B. In addition to covering current events, *Gidra* also featured works of art and literature.
- C. *Gidra* was initially based out of the Asian American Studies Center at UCLA.
- D. People would often give their copies of *Gidra* to others once they had finished reading an issue.

Question ID 11367761

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 11367761

Body Length, Filter Time, and Lunges per Dive for Four Whale Species

Whale species	Typical adult body length (meters)	Average time to filter all engulfed water (seconds)	Average number of lunges per dive deeper than 50 meters
fin	18–22	31.30	3.95
humpback	11–17	17.12	6.28
minke	7–10	8.88	7.48
blue	24–34	60.27	4.02

Some whale species practice lunge feeding, in which they lunge toward prey with their mouths open at wide angles, collect the prey and the surrounding water, and then filter out the water through baleen plates in their mouths. Although the volume of water engulfed increases with whales’ body length, the surface area of whales’ baleen plates, which influences the rate at which water can be filtered, does not increase with body length to the same degree, which helps explain why _____

Which choice most effectively uses data from the table to complete the statement?

- A. minke whales and humpback whales show similar average filter times.
- B. humpback whales show an average of 6.28 lunges per dive.
- C. fin whales show a longer average filter time than minke whales do.
- D. blue whales show the longest average filter time and the highest average number of lunges per dive.

Question ID b773c3b4

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: b773c3b4

Percentages of New Year’s Resolution Makers Who Make Certain
Kinds of Resolutions

Type of resolution	Age 18-29	Age 30-49	Age 50-64	Age 65+
Health and exercise	79	80	79	76
Finances	68	63	56	47
Personal relationships	63	53	58	52
Hobbies	65	53	51	45

A Pew Research Center survey conducted in January 2024 found that three out of ten US adults make at least one New Year’s resolution (a promise for the year ahead), while half of those who make a resolution make more than one. The survey asked participants what kinds of resolutions they made and separated them into several categories. The table presents percentages of people who make particular kinds of New Year’s resolutions among those who choose to make them, indexed by age bracket.

Which choice best presents a conclusion about the habits of New Year’s resolution makers that is best supported by information in the text and the table?

- A. Resolution makers between the ages of 50 and 64 are more likely to make resolutions related to personal relationships and less likely to make resolutions related to finances than resolution makers between the ages of 30 and 49 are.
- B. Resolution makers between the ages of 18 and 29 are more likely to make resolutions about health and exercise than resolution makers between the ages of 30 and 49 are.
- C. The majority of US adults who make resolutions related to health and exercise also make resolutions in multiple additional categories.
- D. Among all US adults, people become less likely to make New Year’s resolutions as they age, regardless of the type of resolution.

Question ID add96ee3

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: add96ee3

The Post Office is a 1912 play by Rabindranath Tagore, originally written in Bengali. The character Amal is a young boy who imagines that the people he sees passing the window of his home are carefree even when engaged in work or chores, as is evident when he says to the daughter of a flower seller, _____

Which quotation from *The Post Office* most effectively illustrates the claim?

- A. "I see, you don't wish to stop; I don't care to stay on here either."

B. "Oh, flower gathering? That is why your feet seem so glad and your anklets jingle so merrily as you walk."

C. "I'll pay when I grow up—before I leave to look for work out on the other side of that stream there."

D. "Wish I could be out too. Then I would pick some flowers for you from the very topmost branches right out of sight."

Question ID ceafbde4

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: ceafbde4

“Ghosts of the Old Year” is an early 1900s poem by James Weldon Johnson. In the poem, the speaker describes experiencing an ongoing cycle of anticipation followed by regretful reflection: _____

Which quotation from “Ghosts of the Old Year” most effectively illustrates the claim?

- A. “What does this brazen tongue declare, / That falling on the midnight air / Brings to my heart a sense of care / Akin to fright?”
- B. “The snow has ceased its fluttering flight, / The wind sunk to a whisper light, / An ominous stillness fills the night, / A pause—a hush.”
- C. “It tells of many a squandered day, / Of slighted gems and treasured clay, / Of precious stores not laid away, / Of fields unreaped.”
- D. “And so the years go swiftly by, / Each, coming, brings ambitions high, / And each, departing, leaves a sigh / Linked to the past.”

Question ID a90c497f

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: a90c497f

Political scientists who favor the traditional view of voter behavior claim that voting in an election does not change a voter’s attitude toward the candidates in that election. Focusing on each US presidential election from 1976 to 1996, Ebonya Washington and Sendhil Mullainathan tested this claim by distinguishing between subjects who had just become old enough to vote (around half of whom actually voted) and otherwise similar subjects who were slightly too young to vote (and thus none of whom voted). Washington and Mullainathan compared the attitudes of the groups of subjects toward the winning candidate two years after each election.

Which finding from Washington and Mullainathan’s study, if true, would most directly weaken the claim made by people who favor the traditional view of voter behavior?

- A. Subjects’ attitudes toward the winning candidate two years after a given election were strongly predicted by subjects’ general political orientation, regardless of whether subjects were old enough to vote at the time of the election.
- B. Subjects who were not old enough to vote in a given election held significantly more positive attitudes towards the winning candidate two years later than they held at the time of the election.
- C. Subjects who voted in a given election held significantly more polarized attitudes toward the winning candidate two years later than did subjects who were not old enough to vote in that election.
- D. Two years after a given election, subjects who voted and subjects who were not old enough to vote were significantly more likely to express negative attitudes than positive attitudes toward the winning candidate in that election.

Question ID 5c89bb94

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 5c89bb94

Baltimore, Maryland, has installed engineered structures along 71% of its shoreline to protect infrastructure from wave erosion and other hazards, a practice known as shoreline hardening. To evaluate the responses of waterbirds to two types of hardening structures—riprap and bulkheads—Diann Prosser et al. surveyed waterbird communities consisting of the tundra swan, the great blue heron, and 62 other species at different sites in the Chesapeake Bay on the US East Coast. Utilizing the Index of Waterbird Community Integrity (IWCI), on which a high score corresponds to high community integrity, the researchers found that bulkheads are more strongly negatively correlated with waterbird community integrity than is riprap.

Which finding, if true, would most directly illustrate the researchers’ finding?

- A. The difference in average IWCI scores for waterbird communities at Stony and Old Road, two sites with a higher percentage of shoreline consisting of bulkheads than of riprap, was statistically insignificant.
- B. Waterbird communities at Old Road, a site with a relatively high percentage of shoreline consisting of bulkheads, had lower average IWCI scores than did waterbird communities at Miles, a site with a relatively high percentage of shoreline consisting of riprap.
- C. Waterbird communities at Curtis, a site with a high percentage of shoreline consisting of bulkheads and riprap, had lower average IWCI scores than did waterbird communities at Onancock, a site with a low percentage of shoreline consisting of bulkheads and riprap.
- D. Waterbird communities at Curtis, a site with equal percentages of shoreline consisting of bulkheads and riprap, had higher average IWCI scores than did waterbird communities at Miles, a site with different percentages of shoreline consisting of bulkheads and riprap.

Question ID 86e8847c

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 86e8847c

Psychologists Dacher Keltner and Jonathan Haidt have argued that experiencing awe—a sensation of reverence and wonder typically brought on by perceiving something grand or powerful—can enable us to feel more connected to others and thereby inspire us to act more altruistically. Keltner, along with Paul K. Piff, Pia Dietze, and colleagues, claims to have found evidence for this effect in a recent study where participants were asked to either gaze up at exceptionally tall trees in a nearby grove (reported to be a universally awe-inspiring experience) or stare at the exterior of a nearby, nondescript building. After one minute, an experimenter deliberately spilled a box of pens nearby.

Which finding from the researchers’ study, if true, would most strongly support their claim?

- A. Participants who had been looking at the trees helped the experimenter pick up significantly more pens than did participants who had been looking at the building.
- B. Participants who helped the experimenter pick up the pens used a greater number of positive words to describe the trees and the building in a postexperiment survey than did participants who did not help the experimenter.
- C. Participants who did not help the experimenter pick up the pens were significantly more likely to report having experienced a feeling of awe, regardless of whether they looked at the building or the trees.
- D. Participants who had been looking at the building were significantly more likely to notice that the experimenter had dropped the pens than were participants who had been looking at the trees.

Question ID 8896f808

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 8896f808

Some residents in a neighborhood in Atlanta recently founded a community garden inside a local park. The residents agreed to volunteer to take care of the garden together. Students at a local high school surveyed some of the volunteers as part of a project to understand the impact of the new garden. The students concluded that the new garden benefited the community overall by fostering connections and relationships between the volunteers and other residents of the neighborhood who weren't volunteering at the garden.

Which quotation from a survey respondent would best illustrate the students' conclusion?

- A. "Our first challenge was deciding what plants would be most suitable to the climate and soil here in Atlanta. We needed plants that could survive the hot and humid summers."
- B. "We're lucky to have a few expert gardeners living in the neighborhood. Some volunteers and I have gone to them a few times with questions, and they've been eager to help us and to learn more about the project."
- C. "I love getting the opportunity to be outside and around nature, especially on days when the weather is nice."
- D. "My favorite thing about the garden is the feeling of pride I get when I walk by each day. As I see the plants growing, I feel good knowing I had a small part in creating this beautiful space in the neighborhood."

Question ID 573dd8d8

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 573dd8d8

“Odalie” is an 1899 short story by Alice Dunbar-Nelson. In the story, a young woman named Odalie attends the annual Mardi Gras carnival in New Orleans, where she lives with her guardian Tante Louise. Dunbar-Nelson portrays Odalie as eager to escape the monotony of her everyday life: _____

Which quotation from “Odalie” most effectively illustrates the claim?

- A. “Mardi Gras was a tiresome day, after all, she sighed, and Tante Louise agreed with her for once.”
- B. “In the old French house on Royal Street, with its quaint windows and Spanish courtyard green and cool, and made musical by the plashing of the fountain and the trill of caged birds, lived Odalie in convent-like seclusion.”
- C. “When one is shut up in a great French house with a grim sleepy tante and no companions of one’s own age, life becomes a dull thing, and one is ready for any new sensation.”
- D. “It was Mardi Gras day at last, and early through her window Odalie could hear the jingle of folly bells on the [participants’] costumes, the tinkle of music, and the echoing strains of songs.”

Question ID 91f6e2cf

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 91f6e2cf

A student is examining a long, challenging poem that was initially published in a quarterly journal without explanatory notes, then later republished in a stand-alone volume containing only that poem and accompanying explanatory notes written by the poet. The student asserts that the explanatory notes were included in the republication primarily as a marketing device to help sell the stand-alone volume.

Which statement, if true, would most directly support the student’s claim?

- A. The text of the poem as published in the quarterly journal is not identical to the text of the poem published in the stand-alone volume.
- B. Many critics believe that the poet’s explanatory notes remove certain ambiguities of the poem and make it less interesting as a result.
- C. The publishers of the stand-alone volume requested the explanatory notes from the poet in order to make the book attractive to readers who already had a copy of the poem in a journal issue.
- D. Correspondence between the poet and the publisher reveals that the poet’s explanatory notes went through several drafts.

Question ID 94bafe57

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 94bafe57

In subtropical Asia, *Apis dorsata* (giant honeybee) plays an essential role in pollinating a wide variety of crops and wild plants. To study how different agricultural land covers affect the species, Rika Raffiudin and colleagues monitored the foraging activity of the bees as well as the pollen content of the honey from *A. dorsata* colonies at two sites in Indonesia: Kampar, characterized by its surrounding monoculture farms (growing a single crop), and Kerinci, a forest-agriculture site where multiple crops, including hot peppers and coffee, are grown nearby. The researchers concluded that a lack of crop variety may reduce total pollen collection by *A. dorsata*.

Which finding, if true, would most directly support the researchers’ conclusion?

- A. Pollen in honey samples from Kampar bee colonies was predominantly sourced from a single plant species, whereas pollen in honey samples from Kerinci bee colonies was sourced from multiple different plant species.
- B. In one Kerinci bee colony, a greater proportion of bees returned to their nests with pollen than returned without pollen, whereas the inverse was observed in a second Kerinci bee colony.
- C. Significantly fewer bees were observed engaging in foraging activities with the crops surrounding Kerinci than with the crops surrounding Kampar.
- D. Honey samples from Kerinci bee colonies contained significantly higher concentrations of pollen than honey samples from Kampar bee colonies did.

Question ID bdc6a49b

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: bdc6a49b

Credited Film Output of James Young Deer, Dark Cloud, Edwin Carewe, and Lillian St. Cyr

Individual	Years active	Number of films known and commonly credited
James Young Deer	1909–1924	33 (actor), 35 (director), 10 (writer)
Dark Cloud	1910–1920	35 (actor), 1 (writer)
Edwin Carewe	1912–1934	47 (actor), 58 (director), 20 (producer), 4 (writer)
Lillian St. Cyr (Red Wing)	1908–1921	66 (actor)

Some researchers studying Indigenous actors and filmmakers in the United States have turned their attention to the early days of cinema, particularly the 1910s and 1920s, when people like James Young Deer, Dark Cloud, Edwin Carewe, and Lillian St. Cyr (known professionally as Red Wing) were involved in one way or another with numerous films. In fact, so many films and associated records for this era have been lost that counts of those four figures’ output should be taken as bare minimums rather than totals; it’s entirely possible, for example, that _____

Which choice most effectively uses data from the table to complete the example?

- A. Dark Cloud acted in significantly fewer films than did Lillian St. Cyr, who is credited with 66 performances.
- B. Edwin Carewe’s 47 credited acting roles includes only films made after 1934.
- C. Lillian St. Cyr acted in far more than 66 films and Edwin Carewe directed more than 58.
- D. James Young Deer actually directed 33 films and acted in only 10.

Question ID d70d05db

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: d70d05db

External shopping cues are a type of marketing that uses obvious messaging—a display featuring a new product, for example, or a “buy one, get one free” offer—to entice consumers to make spontaneous purchases. In a study, data scientist Sam K. Hui and colleagues found that this effect can also be achieved with a less obvious cue: rearranging a store’s layout. The researchers explain that trying to find items in new locations causes shoppers to move through more of the store, exposing them to more products and increasing the likelihood that they’ll buy an item they hadn’t planned on purchasing.

- Which response from a survey given to shoppers who made a purchase at a retail store best supports the researchers’ explanation?
- A. “I needed to buy some cleaning supplies, but they weren’t in their regular place. While I was looking for them, I saw this interesting notebook and decided to buy it, too.”
 - B. “I didn’t buy everything on my shopping list today. I couldn’t find a couple of the items in the store, even though I looked all over for them.”
 - C. “The store sent me a coupon for a new brand of soup, so I came here to find out what kinds of soup that brand offers. I decided to buy a few cans because I had the coupon.”
 - D. “This store is larger than one that’s closer to where I live, and it carries more products. I came here to buy some things that the other store doesn’t always have.”

Question ID f2341118

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: f2341118

Data Sources for Neptune Temperature Analysis

Instrument	Observatory	Data type	Observation years
TEXES (Texas Echelon Cross Echelle Spectrograph)	Gemini Observatory	spectroscopy	2007, 2019
T-ReCS (Thermal-Region Camera Spectrograph)	Gemini Observatory	infrared imaging	2007, 2010
LWS (Long Wavelength Spectrometer)	Keck Observatory	infrared imaging	2003
VISIR (VLT Imager and Spectrometer for mid-InfraRed)	European Southern Observatory	spectroscopy	2006

Julianne I. Moses and colleagues have reported that Neptune may have cooled significantly between 2003 and 2020. The team reached this conclusion by analyzing existing infrared imaging and spectroscopy data about the planet obtained from various instruments in different years. Of the team’s sources listed in the table, the earliest example of spectroscopy data included in the analysis was obtained in _____

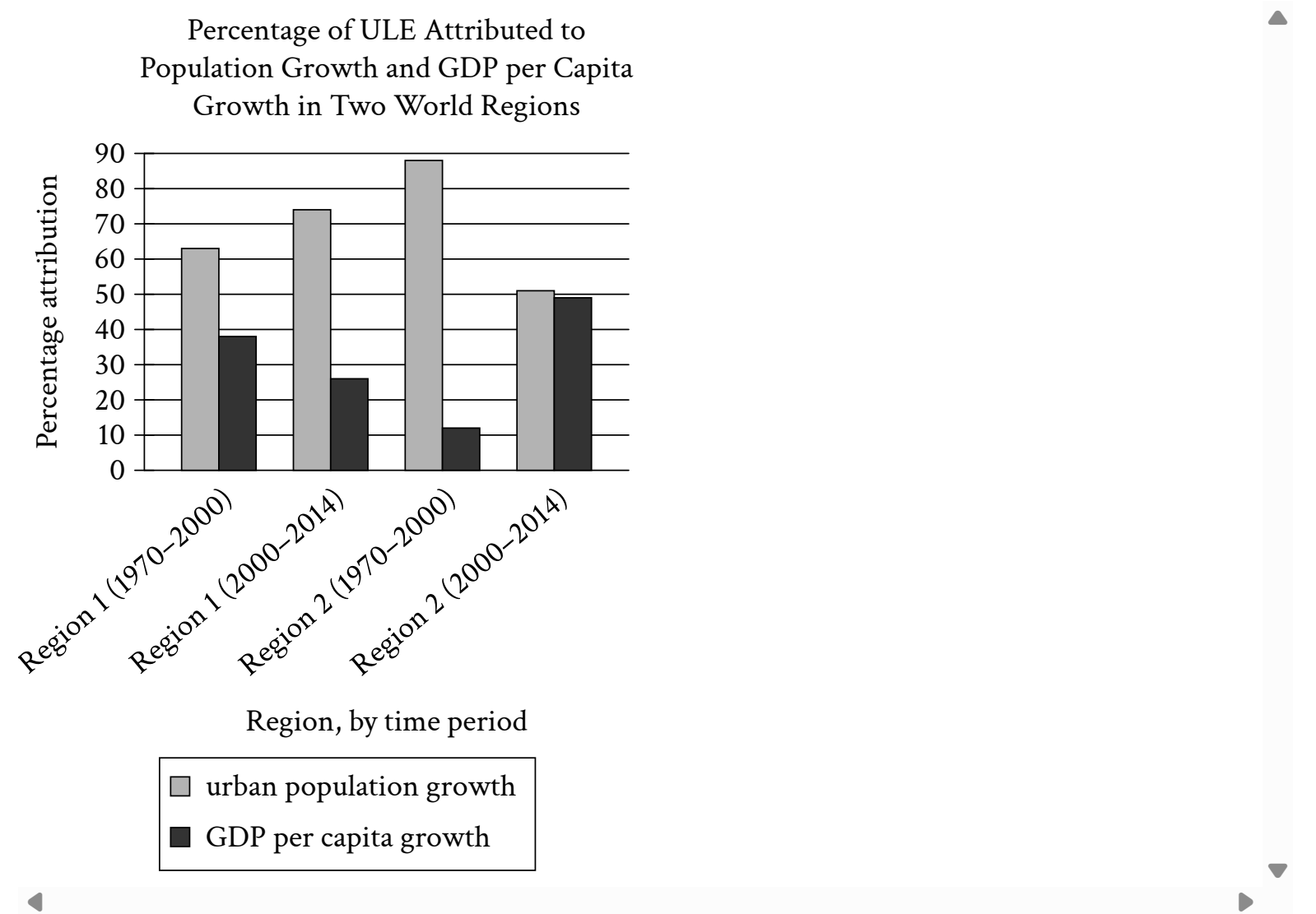
Which choice most effectively uses data from the table to complete the text?

- A. 2007 using TEXES at the Gemini Observatory.
- B. 2007 using T-ReCS at the Gemini Observatory.
- C. 2006 using VISIR at the European Southern Observatory.
- D. 2003 using LWS at the W.M. Keck Observatory.

Question ID f77024db

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: f77024db



In a study of urban physical expansion, Richa Mahtta et al. conducted a meta-analysis of more than 300 cities worldwide to determine whether urban land expansion (ULE) was more strongly influenced by urban population growth or by growth in gross domestic product (GDP) per capita, a measure of economic activity. Because efficient national government is necessary to provide urban services and infrastructure that attract economic investment, Mahtta et al. propose that absent other factors, the importance of GDP per capita growth to ULE would likely increase relative to the importance of population growth as governments become more efficient. If true, this suggests the possibility that _____

Which choice most effectively uses data from the graph to complete the statement?

- A. national governments of countries in Region 1 experienced declines in efficiency in the period from 2000 to 2014, relative to the period from 1970 to 2000.

- B. countries in Region 1 experienced a slower rate of economic growth in the period from 2000 to 2014 than countries in Region 2 did, despite increasing national government efficiency in Region 1.
- C. national governments of most countries in Region 2 became more efficient in the period from 2000 to 2014 than they had been in the period from 1970 to 2000, but those of several countries in this region did not.
- D. national governments of countries in Region 1 and in Region 2 generally became more efficient in the period from 2000 to 2014 than they had been in the period from 1970 to 2000, but at different rates.

Question ID eef2497c

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: eef2497c

Delta 15-N Values in Seagrass Samples from Four Sites on the Yucatan, 2016–2017

Site	February 2016	October 2016	February 2017	October 2017
Akumal Bay	no data available	3.3	2.0	6.3
Mahahual	0.7	no data available	2.5	3.4
Tulum	6.1	5.9	2.3	5.5
Xahuayxol	0.9	0.3	−0.9	1.4

Because water from natural, uncontaminated sources is less enriched with the stable nitrogen isotope ^{15}N than wastewater from human activities is, the presence of such wastewater in nature can be detected by examining delta 15-N values (a measure of the ratio of ^{15}N to ^{14}N) in plants. Karla A. Camacho-Cruz and colleagues assessed delta 15-N values in the seagrass *Thalassia testudinum* from sites on Mexico’s Yucatan peninsula with intermediate tourism development, including Akumal Bay and Tulum, and low tourism development, including Mahahual and Xahuayxol, throughout 2016 and 2017. The data suggest that the intermediate-tourism sites experienced influxes of human wastewater. However, the researchers concluded that this happened intermittently.

Which choice best describes data from the table that support the underlined conclusion?

- A. Although delta 15-N values were generally higher in Akumal Bay and Tulum than in Mahahual and Xahuayxol, the values were lower in Akumal Bay than in Mahahual and Xahuayxol in February 2017.
- B. Delta 15-N values reached their lowest level in February 2017 in both Akumal Bay and Tulum, but no data were available for Akumal Bay in February 2016, when the values reached their highest level in Tulum.
- C. Although all sites showed considerable variation in delta 15-N values, the values remained relatively constant in Akumal Bay from October 2016 to February 2017 and in Tulum from February 2016 to October 2016.
- D. In Akumal Bay and Tulum, delta 15-N values fluctuated considerably across the three measurements made from October 2016 to October 2017.

Question ID 5a998dbe

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 5a998dbe

Matthew D. Rocklage and team examined whether consumer ratings of movies can predict box office success. The team considered both numeric star ratings and written reviews in their research. To analyze the written reviews, the team measured the emotionality—the degree to which a written review expresses an emotional reaction—of user reviews on a movie rating website, assigning each review an emotionality score. After reviewing this research, a student argues that the emotionality of movie reviews is unrelated to a movie’s success at the box office.

Which finding, if true, would most directly weaken the student’s conclusion?

- A. Movies that had the highest average emotionality scores received the lowest average star ratings on the movie rating website.
- B. The average emotionality score of a movie’s reviews was a positive predictor of that movie’s box office earnings.
- C. More than half of the movies that the team examined received an average star rating of 3 out of 5 stars.
- D. The movies that were most successful at the box office tended to have high average star ratings.

Question ID 2251bf77

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 2251bf77

The linguistic niche hypothesis (LNH) posits that the exotericity of languages (how prevalent non-native speakers are) and grammatical complexity are inversely related, which the LNH ascribes to attrition of complex grammatical rules as more non-native speakers adopt the language but fail to acquire those rules. Focusing on two characteristics that are positive indices of grammatical complexity, fusion (when new phonemes arise from the merger of previously distinct ones) and informativity (languages’ capacity for meaningful variation), Olena Shcherbakova and colleagues conducted a quantitative analysis for more than 1,300 languages and claim the outcome is inconsistent with the LNH.

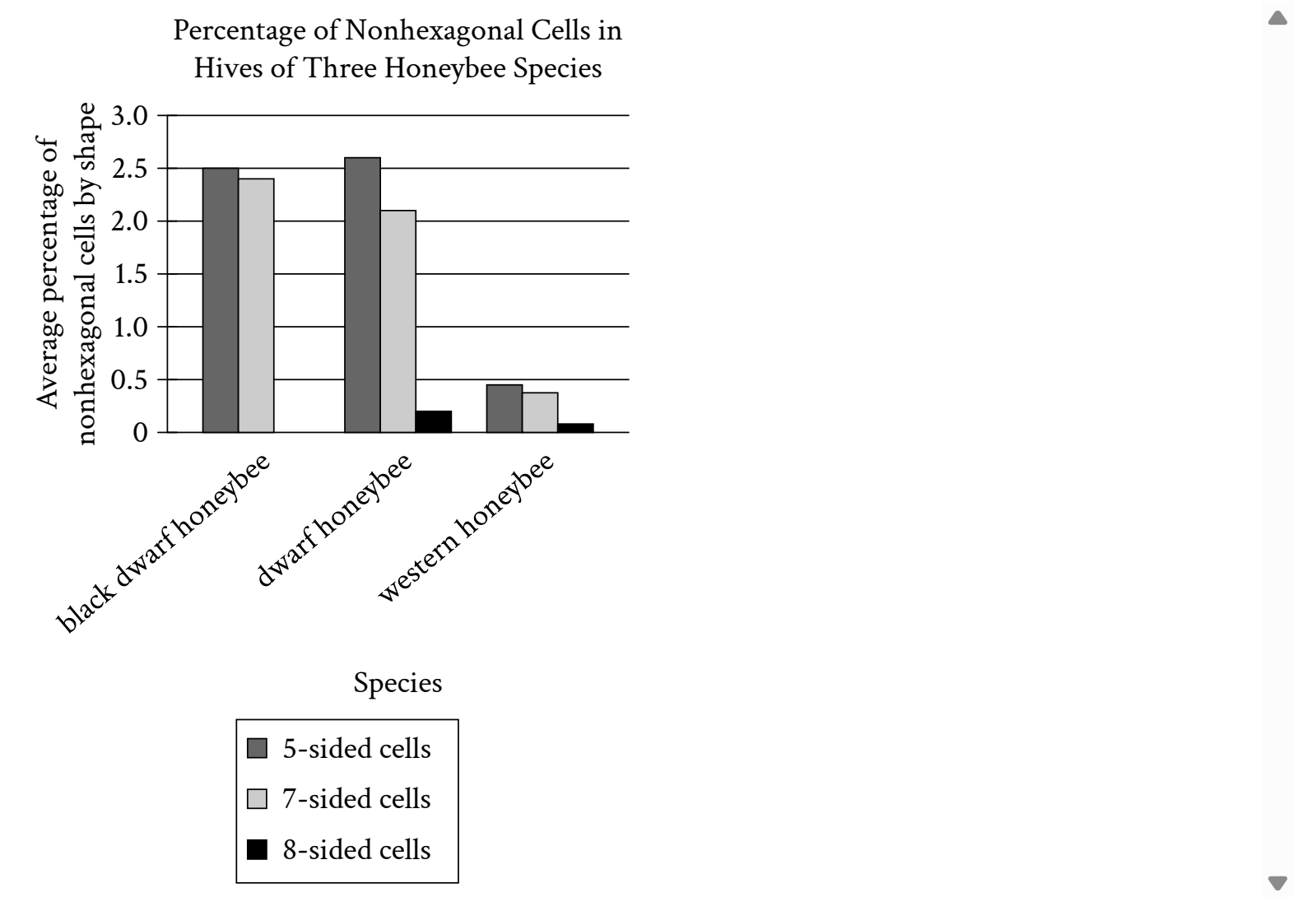
Which finding, if true, would most directly support Shcherbakova and colleagues’ claim?

- A. Shcherbakova and colleagues’ analysis showed a slightly negative correlation between grammatical complexity and fusion and between grammatical complexity and informativity.
- B. Shcherbakova and colleagues’ analysis showed a slightly negative correlation between grammatical complexity and exotericity.
- C. Shcherbakova and colleagues’ analysis showed a slightly positive correlation between grammatical complexity and fusion.
- D. Shcherbakova and colleagues’ analysis showed a slightly positive correlation between fusion and exotericity and between informativity and exotericity.

Question ID 09e6e4f4

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 09e6e4f4



Honeybee hives consist mainly of hexagonal (six-sided) units called cells, in which queens lay eggs. Hexagonal cells for eggs that develop into nonreproductive workers are smaller than those for eggs that develop into reproductive drones, though the size difference varies by species. Difference in cell size results in a construction problem—it’s hard to neatly connect sections of small cells to sections of large cells—that worsens as the difference increases. To fill in gaps between the sections when building a hive, bees rely on cells that have more or fewer than six sides. A student studying beehive structure consults data on three species, concluding that _____

Which choice most effectively uses data from the graph to complete the student’s conclusion?

- A. cells for worker eggs are probably closer in size to cells for drone eggs in the hives of the western honeybee than in the hives of the dwarf honeybee and the black dwarf honeybee.

- B. both the western honeybee and the black dwarf honeybee probably reserve eight-sided cells for drone eggs, while the dwarf honeybee likely deposits drone eggs in seven-sided cells.
- C. the western honeybee probably relies on many more geometrical shapes when constructing cells than either the dwarf honeybee or the black dwarf honeybee does.
- D. the percentage of hexagonal cells is probably slightly lower in the hives of the western honeybee than in the hives of the dwarf honeybee and the black dwarf honeybee.

Question ID 3241cbb1

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 3241cbb1

Born in Chile in 1917, artist and ethnomusicologist Violeta Parra was a pioneer in the *nueva canción chilena* (Chilean New Song) movement that emerged in the late 1950s and then spread throughout Latin America, Portugal, and Spain as *nueva canción*. Parra traveled all over Chile compiling extensive records of authentic folk music as well as recipes, proverbs, and other facets of cultural history. These records formed the foundation for the early movement’s revival of traditional Chilean folk forms in new songs that represented modern realities of the working class and strongly advocated for social change. As the movement spread beyond Chile, the breadth of musical traditions incorporated into its foundation also expanded.

Which detail about songs associated with *nueva canción*, if true, would best illustrate the underlined claim?

- A. Many feature political commentary addressing contemporary issues that stemmed from shared experiences of European colonization in Latin American countries.
- B. Many demonstrate the stylistic influence of *corrido*, a genre of narrative songs from Mexico that had come to be characterized by political themes in the early 1800s.
- C. Many were written with parts meant to be played on the *quena*, a traditional flute used across Andean countries, including Chile.
- D. Many were produced by Argentinian artists in the late 1950s, with others by artists in additional Latin American countries first emerging soon after.

Question ID f2af6ee6

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: f2af6ee6

North American Thrasher Mean Bill Size and Habitat Temperature Range

Species	Mean bill surface area (cm ²)	Mean maximum temperature of warmest month (°C)	Mean minimum temperature of coldest month (°C)
Brown thrasher	1.86	30.40	-4.29
Bendire's thrasher	1.98	36.57	0.24
Long-billed thrasher	2.24	35.27	8.82
Cozumel thrasher	2.28	33.27	18.21
Ocellated thrasher	3.26	27.56	5.45

It has been hypothesized that since birds can dissipate excess heat through their bills, bill size should increase with habitat temperature. To evaluate this hypothesis for a 2021 study, Charlotte Probst and colleagues gathered data on mean bill surface area of species of North American thrashers (genus: *Toxostoma*) as well as on climate conditions of the birds' native habitats. Based on their data, Probst and colleagues concluded that the hypothesis was not fully supported.

Which choice most effectively uses data from the table to support Probst and colleagues' conclusion?

- A. Although the Bendire's thrasher has one of the smallest mean bill surface areas of the birds included in the table, its habitat has one of the lowest mean maximum temperatures in the warmest month and one of the lowest mean minimum temperatures in the coldest month.
- B. Although the Cozumel thrasher has the second greatest mean bill surface area of the birds included in the table, its habitat's mean temperature in the warmest month is significantly higher than that of the other birds' habitats.
- C. Of the birds included in the table, the brown thrasher has the smallest mean bill surface area and the habitat with the lowest mean minimum temperature in the coldest month, while the long-billed thrasher has the second-largest mean bill surface area and the habitat with the second-highest mean minimum temperature in the coldest month.
- D. Of the birds included in the table, the ocellated thrasher has the largest mean bill surface area and the habitat with the lowest mean maximum temperature in the warmest month, while the Bendire's thrasher has the second smallest mean bill surface area and the habitat with the highest mean maximum temperature in the warmest month.

Question ID 55ec9d0d

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 55ec9d0d

Many insects are iridescent, or have colors that appear to shimmer and change when seen from different angles. Scientists have assumed that this feature helps to attract mates but could also attract predators. But biologist Karin Kjernsmo and a team had the idea that the shifting appearance of colors might actually make it harder for other animals to see iridescent insects. To test this idea, the team put beetle forewings on leaves along a forest path and then asked human participants to look for them. Some of the wings were naturally iridescent. Others were painted with a nonchanging color from the iridescent spectrum, such as purple or blue.

Which finding, if true, would most directly support the team’s idea?

- A. On average, participants found most of the purple wings and blue wings and far fewer of the iridescent wings.
- B. On average, participants found the iridescent wings faster than they found the purple wings or blue wings.
- C. Some participants reported that the purple wings were easier to see than the blue wings.
- D. Some participants successfully found all of the wings on the leaves.

Question ID e7390407

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: e7390407

Many music streaming services also function as social media platforms: by giving users the option to follow friends and share curated playlists or information about their listening history, these platforms allow people to convey their music preferences and listening activities directly to their social networks. In a 2023 study, researcher Michael James Walsh interviewed frequent users of a popular music streaming platform to investigate how its social media dimensions shape their listening habits. Walsh found that these dimensions tended to make study participants feel more mindful of how their listening activities may be perceived, which in turn influenced how they managed those activities.

Which quotation from a music streaming platform user would best illustrate Walsh’s finding?

- A. “When I create playlists or choose songs to listen to, I often pick songs that I think the friends who are following me might be interested in listening to, rather than what I might actually prefer listening to in that moment.”
- B. “Because the predictions the platform makes about what new songs I might like depend on my past listening habits, at times its recommendations can feel overly repetitive and unvarying.”
- C. “The social aspects of music streaming make it really easy to create a sense of a shared listening experience with my friends, even if we aren’t in the same room.”
- D. “Listening to music through a streaming platform feels a lot more passive, since I don’t need to make any deliberate choices about what music I’m going to consume, like I do when buying digital downloads or records and CDs.”

Question ID 72e668fa

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 72e668fa

Neurobiologists Laura Cuaya, Raúl Hernández-Pérez, and colleagues investigated the language detection abilities of eighteen dogs. The researchers monitored the brain activity of Joey (an Australian shepherd), Mini (a mixed breed), and other dogs while the animals listened to three recordings: one of *The Little Prince* being read in Spanish, the second in Hungarian, and a third made up of short, randomly selected fragments of the first two, scrambled so that they didn't resemble human speech. Each dog was familiar with either Spanish or Hungarian, but not both. The team concluded that differences in dogs' anatomical features may affect their ability to distinguish speech from nonspeech.

Which finding from the study, if true, would most directly support the team's conclusion?

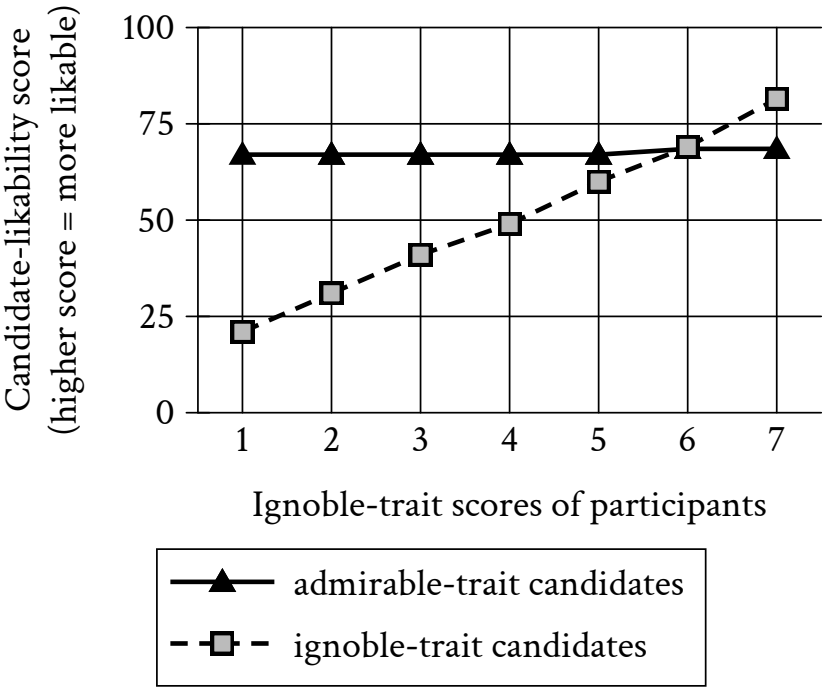
- A. Long-headed dogs accustomed to hearing Spanish tended to show more brain activity when hearing Spanish than long-headed dogs accustomed to hearing Hungarian showed when hearing Hungarian.
- B. Compared with shorter-headed dogs, longer-headed dogs showed a greater difference in brain activity when hearing either Spanish or Hungarian than when hearing the scrambled recording.
- C. The pattern of brain activity that long-headed dogs showed when hearing the scrambled recording was different from the pattern of brain activity that short-headed dogs showed when hearing the language they were accustomed to.
- D. Compared with shorter-headed dogs, longer-headed dogs showed a greater difference in brain activity when hearing the language they were accustomed to than when hearing the other language.

Question ID cd72ffd4

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: cd72ffd4

Participants' Likability Ratings for
Candidates by Candidates' Traits
and Participants' Ignoble-Trait Scores



Alessandro Nai et al. presented study participants with vignettes about fictive political candidates, portraying them as embodying a personality trait widely considered admirable (e.g., agreeableness) or one considered ignoble (e.g., cynicism). A survey recorded participants' ratings of the candidates' likability and showed that across participants, ignoble-trait candidates were less likable than admirable-trait candidates. However, when the researchers factored in the participants' own personality-trait scores, on a scale of 1 (least ignoble) to 7 (most ignoble), they concluded that this relative ranking of candidates persisted except among the participants with high ignobility scores.

Which choice best describes data from the graph that support the researchers' conclusion?

- A. There was a strong positive correlation between participants' ignobility scores and admirable-trait candidates' likability ratings, but there was no correlation between ignobility scores and ignoble-trait candidates' likability ratings.
- B. Participants with an ignobility score of 5 or less rated admirable-trait candidates as more likable than ignoble-trait candidates, whereas participants with an ignobility score of 6 or more rated ignoble-trait candidates as equally likable as or even more likable than admirable-trait candidates.
- C. Overall, participants rated admirable-trait candidates as quite likable, and that rating was not significantly affected by the participants' ignobility scores.

D. Unlike participants with an ignobility score of 6, participants with an ignobility score either greater or less than 6 gave admirable-trait candidates and ignoble-trait candidates different likability ratings.

Question ID c5257fc8

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: c5257fc8

Fiber Characteristics of Mouflon, Navajo-Churro, and Spanish Merino Sheep

Type of sheep	Diameter of outer coat fibers (in microns)	Diameter of inner coat fibers (in microns)
Spanish Merino	19–24	17–21
Navajo-Churro	35 or higher	10–35
Mouflon	150	15

Domestic sheep’s wild ancestor, the mouflon, has a coarse outer coat and an inner coat of wool fiber that is finer in diameter and therefore much softer. In some domestic breeds, such as the Spanish Merino, the outer fiber is only marginally coarser than the inner, and the wool is soft overall. Thus, Merino wool is ideal for delicate garments worn against the skin. Meanwhile, the Navajo-Churro has been selected to retain the marked distinction between outer and inner fiber that the Merino has lost. Being coarser than Merino wool overall, Navajo-Churro wool yields a more durable yarn, which Diné (Navajo) weavers use in their celebrated rugs. Yet a comparison of the fiber characteristics of all three sheep reveals that _____

- Which choice most effectively uses data from the table to complete the text?
- A. the selection process that enabled the Navajo-Churro to retain its somewhat coarse outer fiber also resulted in inner fiber that, at its softest, is softer than either the mouflon’s or the Merino’s inner fiber.
 - B. the Navajo-Churro more closely resembles its ancestor, the mouflon, in the uniform softness of its inner fiber, while the Merino more closely resembles the mouflon in the variable diameter of its outer fiber.
 - C. domestication resulted in a counterintuitive increase in the inner fiber’s minimum diameter, making the inner fiber of the Merino and the Navajo-Churro less suitable for delicate garments than the mouflon’s inner fiber is.
 - D. the domestication of the mouflon and the subsequent selection process that produced the Merino and the Navajo-Churro resulted in greater softness of outer and inner fiber alike.

Question ID 7b580e38

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 7b580e38

In 1967 the US Congress created the Corporation for Public Broadcasting, which in turn created National Public Radio (NPR). NPR began producing and distributing high-quality news and cultural programming to affiliate stations across the United States in 1971. In a research paper, a student claims that the Corporation for Public Broadcasting and NPR were inspired by the British Broadcasting System (BBC), which had been established in the 1920s.

Which quotation from a work by a historian would be the most effective evidence for the student to include in support of this claim?

- A. "Although the BBC had begun as a private corporation, politicians successfully argued to make it a public company because they believed a public broadcaster could help build national unity in the aftermath of World War I."
- B. "For many decades, the BBC had no competition since it held Britain's only broadcasting license, whereas in the United States, the Corporation for Public Broadcasting launched NPR in a broadcasting market already filled with competitors."
- C. "Congress's embrace of publicly funded broadcasting reflected a common belief among US politicians that the role of government was not only to ensure people's safety and liberty but also to enrich people's lives in other ways."
- D. "The goal of the BBC was to support British democracy by promoting an informed citizenry, and US legislators believed that ensuring access to high-quality programming could do the same for democracy in the United States."

Question ID 3dc4c39c

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 3dc4c39c

Percentage of Available Eggs Eaten by Cane Toad Tadpoles

Amphibian species (common name)	Percentage of eggs eaten	Native to Australia	Produces bufadienolide
Little red tree frog	1%	yes	no
Cane toad	90%	no	yes
Short-footed frog	7%	yes	no
Striped burrowing frog	10%	yes	no
Dainty green tree frog	1%	yes	no

Native to Latin America, the cane toad was introduced to Australia in the 1930s. In recent decades, tadpoles in the Australian population have been shown to consume eggs of their own species. A 2022 study showed that when presented with cane toad eggs as well as eggs of native Australian amphibians, cane toad tadpoles disproportionately consumed eggs of their own species. This behavior results from their attraction to bufadienolide, a chemical produced by the eggs of cane toads but not by the eggs of native amphibians. However, using data from this study, a student wishes to argue that the presence of bufadienolide doesn't entirely explain the cane toad tadpoles' preference for certain eggs over others.

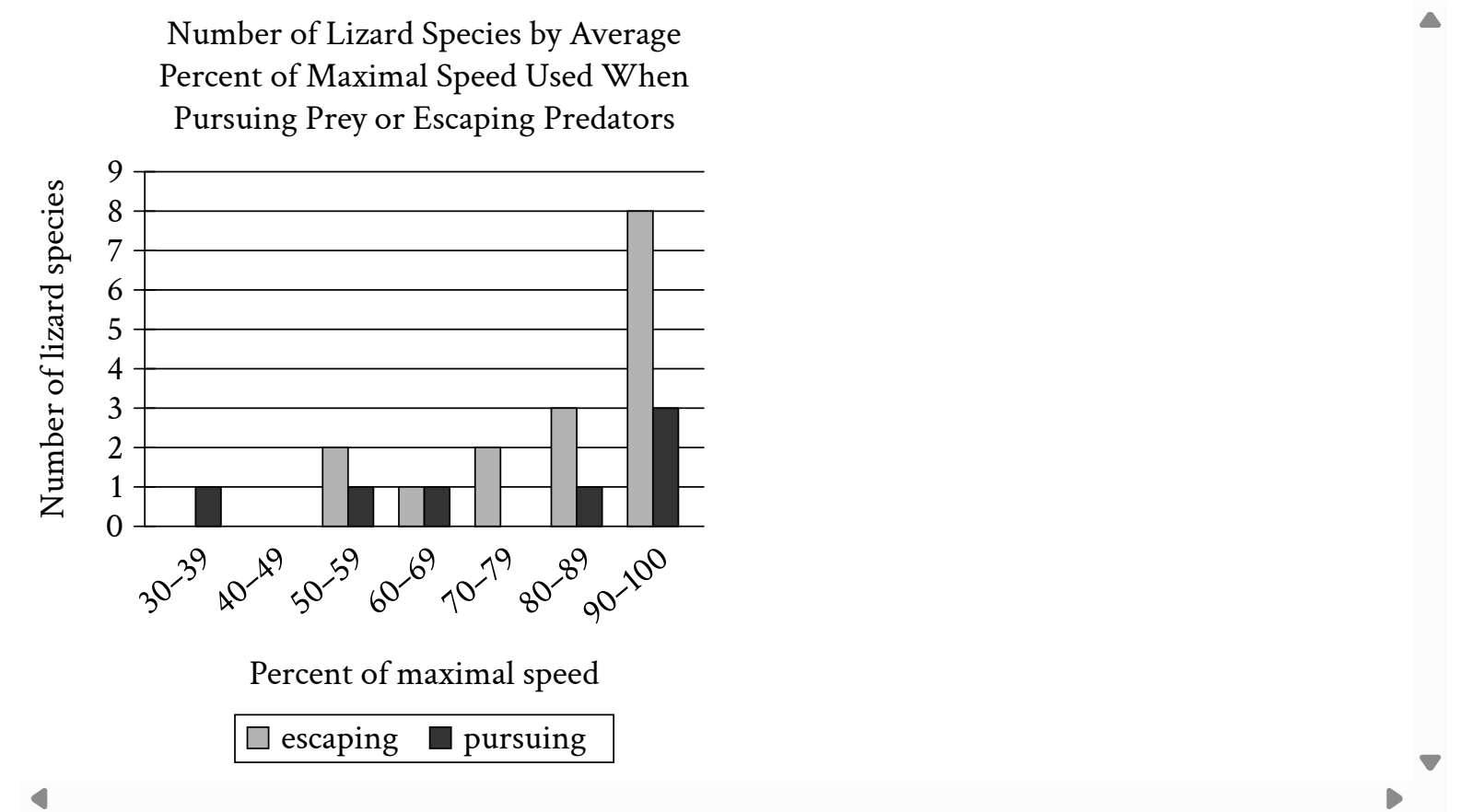
Which choice best describes data from the table that support the student's argument?

- A. The tadpoles consumed a higher percentage of the striped burrowing frog eggs than they did of the eggs of the dainty green tree frog.
- B. The tadpoles left a certain percentage of the eggs of each of the five species unharmed, thus ultimately allowing them to hatch.
- C. The tadpoles consumed a lower percentage of the short-footed frog eggs than they did of the eggs of their own species.
- D. The tadpoles consumed the same percentage of the dainty green tree frog eggs as they did of the little red tree frog eggs.

Question ID 08926a7f

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 08926a7f



It may seem that the optimal strategy for an animal pursuing prey or escaping predators is to move at maximal speed, but the energy expense of exploiting full speed capacity can disfavor such a strategy even in escape contexts, as evidenced by the fact that _____

- Which choice most effectively uses data from the graph to complete the text?
- A. most lizard species use about the same percentage of their maximal speed when escaping predation as they do when pursuing prey.
 - B. multiple lizard species move at an average of less than 90% of their maximal speed while escaping predation.
 - C. more lizard species use, on average, 90%–100% of their maximal speed while escaping predation than use any other percentage of their maximal speed.
 - D. at least 4 lizard species use, on average, less than 100% of their maximal speed while pursuing prey.

Question ID 3f902c47

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 3f902c47

Although most songbirds build open, cupped nests, some species build domed nests with roofs that provide much more protection. Many ecologists have assumed that domed nests would provide protection from weather conditions and thus would allow species that build them to have larger geographic ranges than species that build open nests do. To evaluate this assumption, a research team led by evolutionary biologist Iliana Medina analyzed data for over 3,000 species of songbirds.

Which finding from Medina and her colleagues’ study, if true, would most directly challenge the assumption in the underlined sentence?

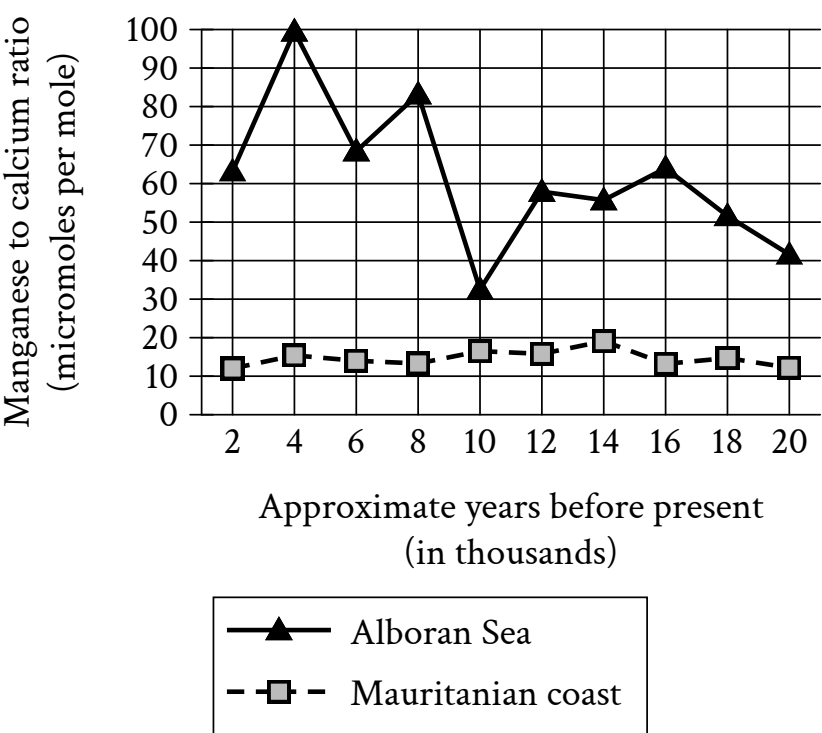
- A. Species that build open nests tend to have higher extinction rates than species that build domed nests.
- B. Species that build open nests tend to be smaller in size than species that build domed nests.
- C. Species that build open nests tend to use fewer materials to build their nests than species that build domed nests do.
- D. Species that build open nests tend to have larger ranges than species that build domed nests.

Question ID 93d7a644

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 93d7a644

Ratio of Manganese to Calcium in Samples from Alboran Sea and Mauritanian Coast



The population of the coral *Lophelia pertusa* declined significantly around 9,000 years ago in the Alboran Sea and around 11,000 years ago near the Mauritanian coast. Using the ratio of manganese to calcium, which inversely correlates with ocean oxygenation levels, marine scientist Rodrigo da Costa Portilho-Ramos and colleagues evaluated whether oxygenation played a role in the declines of *L. pertusa*. The researchers concluded that oxygenation may have been important in the Alboran Sea but not near the Mauritanian coast, since _____

Which choice most effectively uses data from the graph to complete the statement?

- A. a substantial increase in oxygenation in the Alboran Sea corresponded with the local decline in *L. pertusa*, but the opposite relationship between oxygenation and *L. pertusa* was found near the Mauritanian coast.
- B. *L. pertusa* declined in the Alboran Sea during a period of substantial local decline in oxygenation, but *L. pertusa* declined near the Mauritanian coast during a period of little local change in oxygenation.
- C. oxygenation in the Alboran Sea was higher before the decline in *L. pertusa* than after the decline, whereas oxygenation near the Mauritanian coast was relatively low both before and after the decline in *L. pertusa*.

D. oxygenation in the Alboran Sea tended to be substantially higher than oxygenation near the Mauritanian coast during the period studied.

Question ID 856b0a5a

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 856b0a5a

Mosasaurs were large marine reptiles that lived in the Late Cretaceous period, approximately 100 million to 66 million years ago. Celina Suarez, Alberto Pérez-Huerta, and T. Lynn Harrell Jr. examined oxygen-18 isotopes in mosasaur tooth enamel in order to calculate likely mosasaur body temperatures and determined that mosasaurs were endothermic—that is, they used internal metabolic processes to maintain a stable body temperature in a variety of ambient temperatures. Suarez, Pérez-Huerta, and Harrell claim that endothermy would have enabled mosasaurs to include relatively cold polar waters in their range.

Which finding, if true, would most directly support Suarez, Pérez-Huerta, and Harrell’s claim?

- A. Mosasaurs’ likely body temperatures are easier to determine from tooth enamel oxygen-18 isotope data than the body temperatures of nonendothermic Late Cretaceous marine reptiles are.
- B. Fossils of both mosasaurs and nonendothermic marine reptiles have been found in roughly equal numbers in regions known to be near the poles during the Late Cretaceous, though in lower concentrations than elsewhere.
- C. Several mosasaur fossils have been found in regions known to be near the poles during the Late Cretaceous, while relatively few fossils of nonendothermic marine reptiles have been found in those locations.
- D. During the Late Cretaceous, seawater temperatures were likely higher throughout mosasaurs’ range, including near the poles, than seawater temperatures at those same latitudes are today.

Question ID 7aabd8b8

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 7aabd8b8

Given that stars and planets initially form from the same gas and dust in space, some astronomers have posited that host stars (such as the Sun) and their planets (such as those in our solar system) are composed of the same materials, with the planets containing equal or smaller quantities of the materials that make up the host star. This idea is also supported by evidence that rocky planets in our solar system are composed of some of the same materials as the Sun.

Which finding, if true, would most directly weaken the astronomers' claim?

- A. Most stars are made of hydrogen and helium, but when cooled they are revealed to contain small amounts of iron and silicate.
- B. A nearby host star is observed to contain the same proportion of hydrogen and helium as that of the Sun.
- C. Evidence emerges that the amount of iron in some rocky planets is considerably higher than the amount in their host star.
- D. The method for determining the composition of rocky planets is discovered to be less effective when used to analyze other kinds of planets.

Question ID 0104f233

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 0104f233

The ancient Greek concept of “mimesis,” a term used in the works of Plato, Aristotle, and other Greek philosophers in discussions of representational art—visual, performance, or literary art that aims to depict the real world—is a foundational concept of the Western philosophy of aesthetics. Mimesis is typically translated as “imitation” in modern editions of ancient Greek texts, but scholar Stephen Halliwell warns that this is overly reductive: “imitation” implies that art merely copies—and is thus by definition entirely derivative of—a reality that exists outside and prior to the work of art, and translating “mimesis” thusly obscures the multifaceted ways in which the ancient Greeks understood the relationship between art and reality.

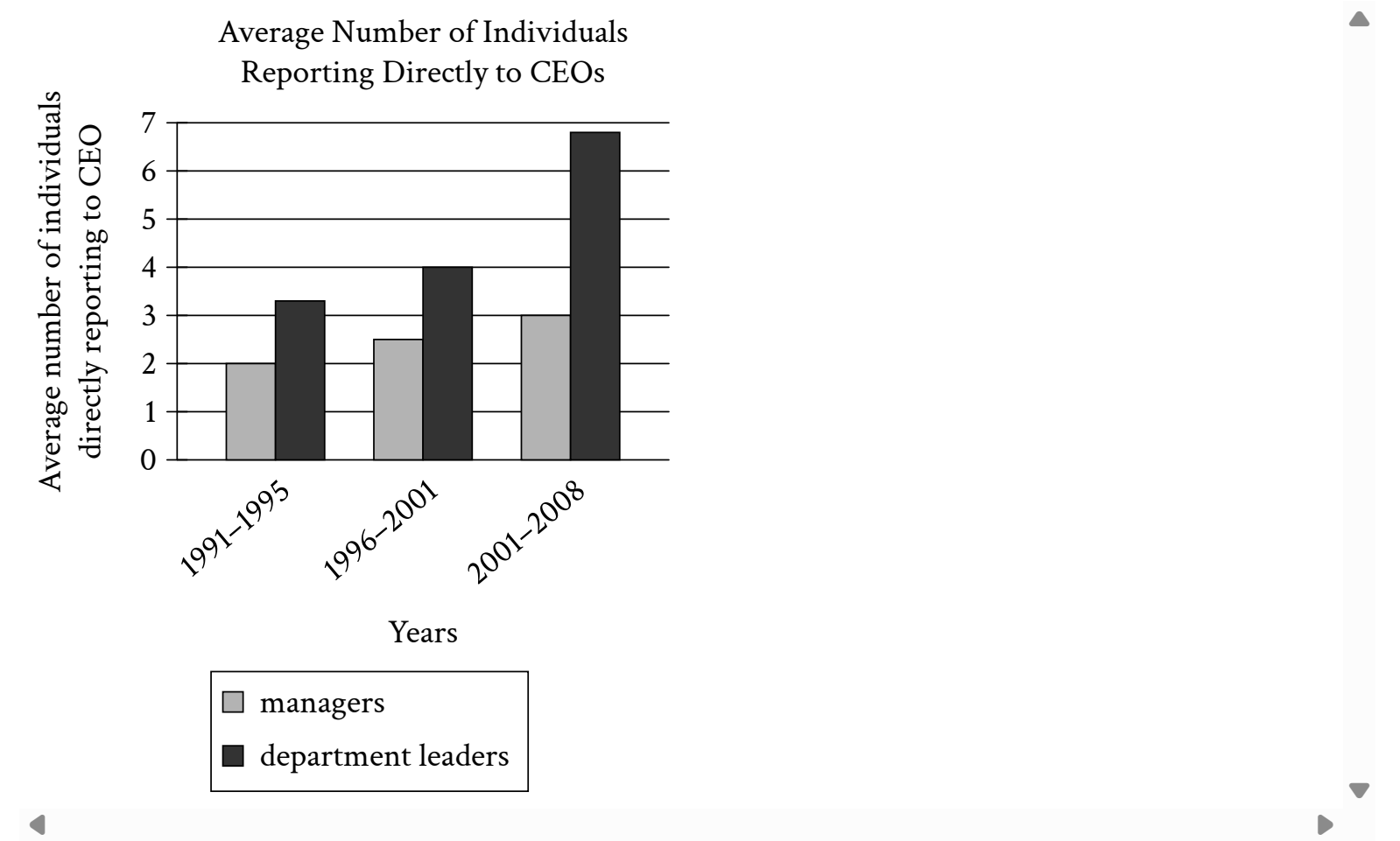
Which statement, if true, would most directly support the claim by Halliwell presented in the text?

- A. One of the earliest appearances of mimesis’s root word, *mimos*, can be found in an ancient Greek tragedy in reference to dramatic impersonation, and the *mim-* root came to be generally associated with the musical and poetic arts by the fifth century BCE.
- B. Both Plato’s and Aristotle’s theorizations of mimesis examine the psychological effects that works of art induce in the viewer or listener.
- C. Although several of Plato’s earliest philosophical works discuss aesthetic ideas, the term “mimesis” doesn’t appear in Plato’s discussions of art until *Cratylus*, a relatively late work.
- D. Although Plato’s writings typically characterize representational art as an inferior reflection of the physical world, Aristotle suggests that mimesis can refer to art’s capacity to envision hypothetical conditions that could, but don’t yet, exist.

Question ID 90ded699

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 90ded699



Considering a large sample of companies, economics experts Maria Guadalupe, Julie Wulf, and Raghuram Rajan assessed the number of managers and leaders from different departments who reported directly to a chief executive officer (CEO). According to the researchers, the findings suggest that across the years analyzed, there was a growing interest among CEOs in connecting with more departments in their companies.

Which choice best describes data from the graph that support the researchers' conclusion?

- A. The average numbers of managers and department leaders reporting directly to their CEO didn't fluctuate from the 1991–1995 period to the 2001–2008 period.
- B. The average number of managers reporting directly to their CEO was highest in the 1996–2001 period.
- C. The average number of department leaders reporting directly to their CEO was greater than the average number of managers reporting directly to their CEO in each of the three periods studied.
- D. The average number of department leaders reporting directly to their CEO rose over the three periods studied.

Question ID 73a7aadb

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 73a7aadb

Dated Ages of Lunar Samples from Select Missions			
Mission name	Year	Landing site	Approximate age of lunar samples (billions of years)
Apollo 11	1969	Mare Tranquillitatis	3.6
Apollo 15	1971	Mare Imbrium	3.3
Apollo 17	1972	Mare Serenitatis	3.8
Chang’e 5	2020	Oceanus Procellarum	2.0

The Apollo program missions were spaceflights to the moon led by the United States during the 1960s and 1970s during which astronauts collected some samples of the moon’s surface. More recently, China launched the Chang’e 5 mission, which returned additional lunar surface samples. Researchers have analyzed and dated each of the samples, concluding that the lunar samples collected during the Chang’e 5 mission are significant because _____

- Which choice most effectively uses data from the table to complete the claim?
- A. they are much younger than the samples brought back from any of the Apollo missions.
 - B. they were collected from the same landing site as the Apollo 11 mission.
 - C. they are closest in age to the samples brought back by the Apollo 17 mission.
 - D. they helped confirm the predicted ages of the lunar samples from the Apollo missions.

Question ID 5ec5005e

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 5ec5005e

“Mr. Cornelius Johnson, Office-Seeker” is a 1900 short story by Paul Laurence Dunbar. In the story, the narrator describes Mr. Cornelius Johnson’s appearance as conveying his exaggerated sense of his importance: _____

Which quotation from “Mr. Cornelius Johnson, Office-Seeker” most effectively illustrates the claim?

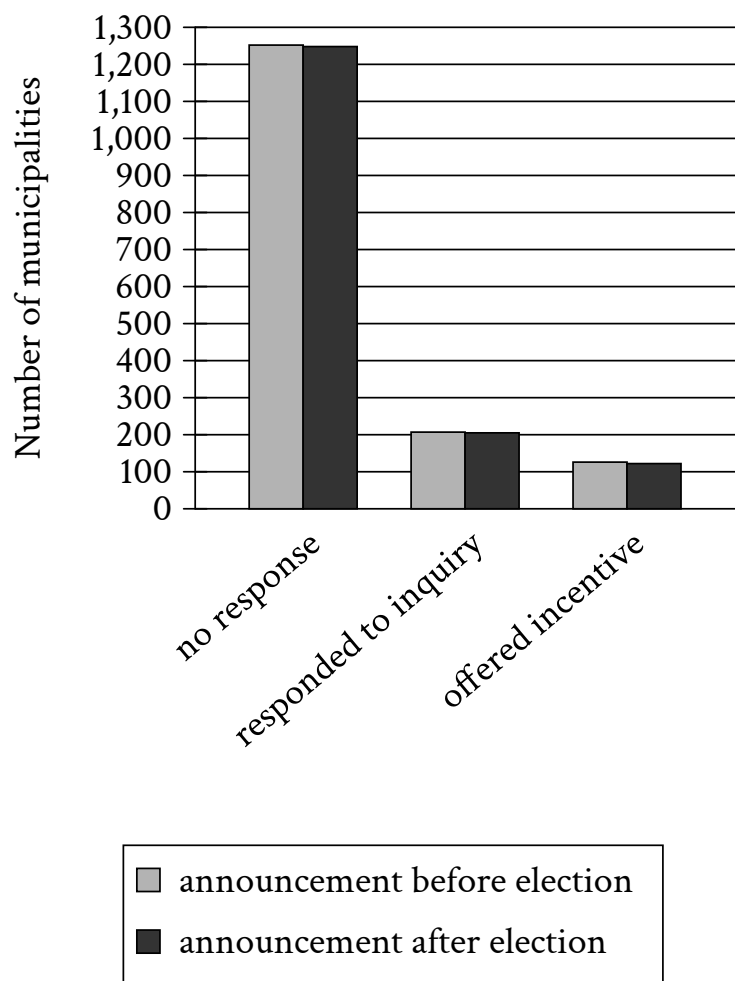
- A. “He carried himself always as if he were passing under his own triumphal arch.”
- B. “The grey Prince Albert was scrupulously buttoned about his form, and a shiny top hat replaced the felt of the afternoon.”
- C. “It was a beautiful day in balmy May and the sun shone pleasantly on Mr. Cornelius Johnson’s very spruce Prince Albert suit of grey as he alighted from the train in Washington.”
- D. “Mr. Cornelius Johnson always spoke in a large and important tone.”

Question ID 57bb328f

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 57bb328f

Municipalities’ Responses to Inquiries about Potential Incentives for Firm



In the United States, firms often seek incentives from municipal governments to expand to those municipalities. A team of political scientists hypothesized that municipalities are much more likely to respond to firms and offer incentives if expansions can be announced in time to benefit local elected officials than if they can’t. The team contacted officials in thousands of municipalities, inquiring about incentives for a firm looking to expand and indicating that the firm would announce its expansion on a date either just before or just after the next election.

Which choice best describes data from the graph that weaken the team’s hypothesis?

- A. A large majority of the municipalities that received an inquiry mentioning plans for an announcement before the next election didn’t respond to the inquiry.

- B. The proportion of municipalities that responded to the inquiry or offered incentives didn't substantially differ across the announcement timing conditions.
- C. Only around half the municipalities that responded to inquiries mentioning plans for an announcement before the next election offered incentives.
- D. Of the municipalities that received an inquiry mentioning plans for an announcement date after the next election, more than 1,200 didn't respond and only around 100 offered incentives.

Question ID c5e30d22

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: c5e30d22

Water flowing around an obstruction creates vortices (patterns of swirls) of varying size; by detecting the vortices, fish can determine the size and position of the obstruction. Testing by Yuzo R. Yanagisuru, Otar Akanyeti, and James C. Liao using models of three head shapes—narrow (low ratio of width to length), intermediate, and wide (high ratio of width to length)—showed that for medium-sized vortices, fish with wide heads would be least able to distinguish between vortices and general turbulence in the water. A second research team has therefore hypothesized that in low-visibility conditions, wider-headed fish will be less likely than narrower-headed fish to detect obstructions.

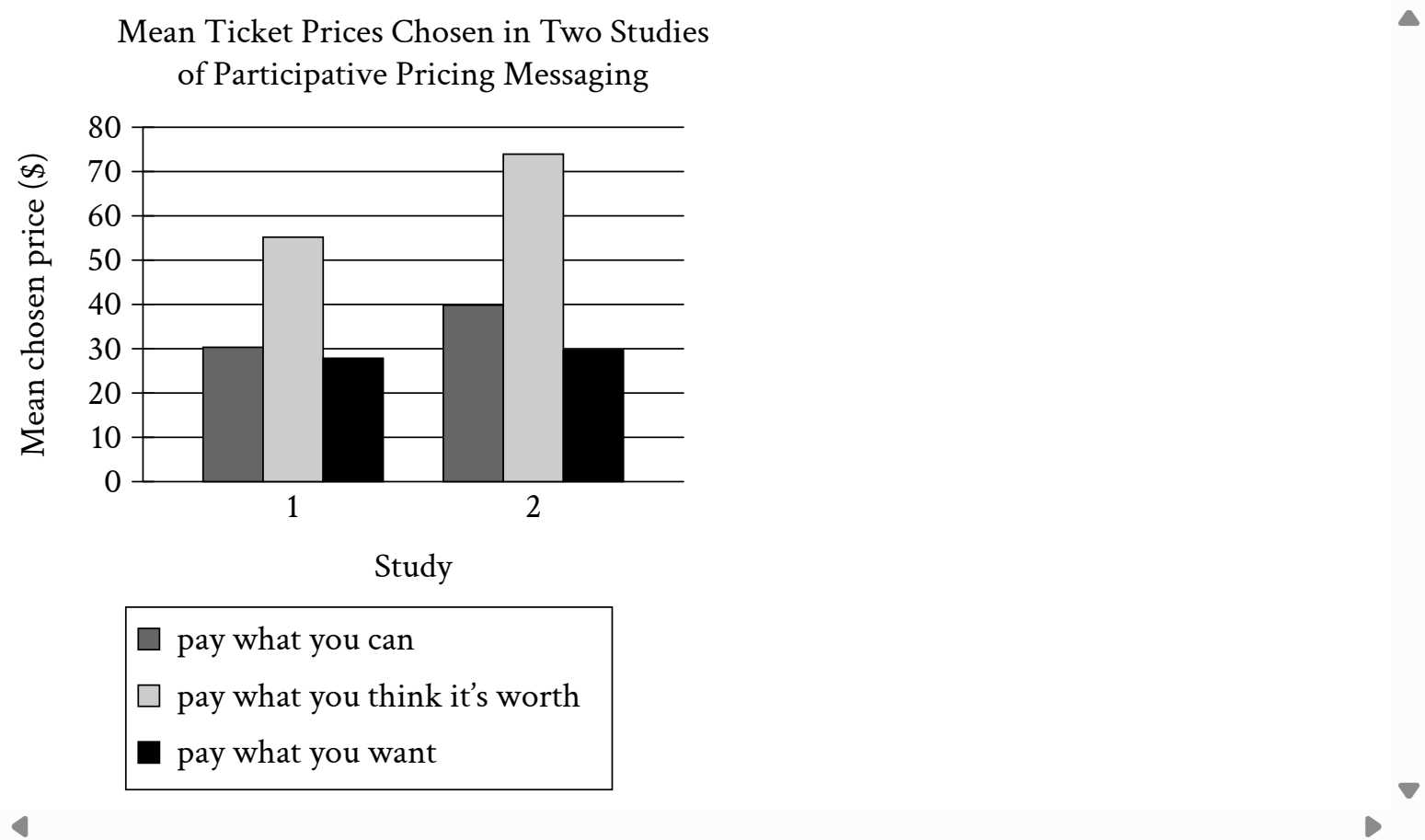
Which finding, if true, would most directly support the second research team’s hypothesis?

- A. A study using obstructions that created medium-sized vortices in low-visibility conditions found that the bristlemouth (*Chaetostoma yurubiense*), which has a relatively wide head, bumped into more than half of the obstructions.
- B. A study using obstructions that created medium-sized vortices in low-visibility conditions found that some specimens of dusky smooth-hound (*Mustelus canis*), which has a relatively narrow head, bumped into the obstructions more often than other specimens of the same fish did.
- C. A study using obstructions that created medium-sized vortices in low-visibility conditions found that the wider-headed bristlemouth (*Chaetostoma yurubiense*) bumped into obstructions more often than the narrower-headed dusky smooth-hound (*Mustelus canis*) did.
- D. A study using obstructions that created medium-sized vortices in low-visibility conditions found that the narrower-headed dusky smooth-hound (*Mustelus canis*) bumped into the obstructions just as often as the wider-headed bristlemouth (*Chaetostoma yurubiense*) did.

Question ID 7b1ecd4f

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 7b1ecd4f



Participative pricing, in which purchasers choose the prices they pay for products, can enable sellers to capitalize on the heterogeneous values consumers assign to the same goods and services, but doing so requires careful messaging. Annie Peng Cui and Jennifer Wiggins recruited 171 participants (ages 18–60) online for an initial study and 83 students (ages 18–31) at a state university for a second study to test the effect of three different messages—“pay what you can,” “pay what you think it’s worth,” and “pay what you want”—on how much participants would pay for concert tickets. Their results illustrate both the heterogeneity of consumer valuations and how sellers can benefit by prompting consumers to consider their own valuations:

- Which choice most effectively uses data from the graph to complete the text?
- A. the students tended to value the concert tickets more highly than did the more age-diverse group recruited online, but when considering what they could afford to pay, the students tended to choose a lower price than did the other group.
 - B. in all three messaging conditions, the group of participants recruited online tended to choose lower prices than did the students, but both groups tended to choose prices closest to the actual cost of the tickets when prompted to consider the tickets’ value.

- C. the students tended to value the concert tickets more highly than did the more age-diverse group recruited online, but both groups tended to choose a higher price when considering the value of the tickets than when considering what they could afford or wanted to pay.
- D. within each group of participants, there was wide variation in the value that individuals assigned to the concert tickets, but the students tended to assign a higher value to the tickets than did the more age-diverse group recruited online.

Question ID ba5df00d

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: ba5df00d

A museum curator is writing a biographical statement about Trinidadian-born Chinese dancer, choreographer, and teacher Dai Ailian for a new exhibit on Chinese dance. The curator claims that some of the pieces Dai created shortly after arriving in mainland China in 1941, such as the solo dance *Yao Drum*, reflect a desire to represent the dances of local communities Dai visited during her travels through China.

Which quotation from a work by a dance historian would be the most effective evidence for the curator to include in support of this claim?

- A. "There is no sound or music accompanying Dai's movements in *Yao Drum*, aside from the sounds of drumsticks beating against a drum and against each other."
- B. "Unlike some of the works Dai created in the early 1940s, *Yao Drum* does not feature a narrative structure, humorous elements, or references to real-life events."
- C. "*Yao Drum* was inspired by a ceremonial dance Dai witnessed during her time performing field research among the Yao people in the province of Guizhou in 1941 or 1942."
- D. "*Yao Drum* is notable for its intense physicality, with Dai performing sharp jumps, swift turns, and dramatic sweeps of her legs through the air as she moves in circles on the stage."

Question ID 2ec25c90

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 2ec25c90

Sense and Sensibility is an 1811 novel by Jane Austen. In the novel, Austen describes Marianne Dashwood’s ability to persuade others of the rightness of her artistic judgments, as is evident when Marianne visits with John Willoughby, a potential suitor:

Which quotation from *Sense and Sensibility* most effectively illustrates the claim?

- A. “Above all, when she heard him declare, that of music and dancing he was passionately fond, she gave him such a look of approbation as secured the largest share of his discourse to herself for the rest of his stay.”
- B. “Their taste was strikingly alike. The same books, the same passages were idolized by each—or if any difference appeared, any objection arose, it lasted no longer than till the force of her arguments and the brightness of her eyes could be displayed.”
- C. “It was only necessary to mention any favourite amusement to engage her to talk. She could not be silent when such points were introduced, and she had neither shyness nor reserve in their discussion.”
- D. “They speedily discovered that their enjoyment of dancing and music was mutual, and that it arose from a general conformity of judgment in all that related to either. Encouraged by this to a further examination of his opinions, she proceeded to question him on the subject of books.”

Question ID e1bb2ef2

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: e1bb2ef2

Sandra Cisneros’s 1984 novella *The House on Mango Street* made a lasting impact on US literature. Its depiction of Mexican American culture inspired later authors to examine their own heritage within their fictional works. Also influential was the book’s portrayal of the main character, Esperanza, during a pivotal year of her youth. This insightful depiction of a preteen girl encouraged authors who, like Cisneros herself, are Latina to use fictional works to examine experiences from their own youth.

Which statement, if true, would most strongly support the claim in the underlined sentence?

- A. In interviews, a number of Latina authors say that *The House on Mango Street* inspired them to write about their own adolescence in their novels.
- B. In published writings, several prominent authors who are not Latina say that reading *The House on Mango Street* influenced their approach to writing fiction.
- C. The *House on Mango Street* has sold over six million copies and is one of the most commonly read books among high school and university students in the US.
- D. Since 1984, new novels about young Latina characters by Latina authors have often been compared to *The House on Mango Street*.

Question ID 056efa7c

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 056efa7c

O Pioneers! is a 1913 novel by Willa Cather. In the novel, Cather depicts Alexandra Bergson as a person who takes comfort in understanding the world around her: _____

Which quotation from *O Pioneers!* most effectively illustrates the claim?

- A. "She looked fixedly up the bleak street as if she were gathering her strength to face something, as if she were trying with all her might to grasp a situation which, no matter how painful, must be met and dealt with somehow."
- B. "She had never known before how much the country meant to her. The chirping of the insects down in the long grass had been like the sweetest music. She had felt as if her heart were hiding down there, somewhere, with the quail and the plover and all the little wild things that crooned or buzzed in the sun. Under the long shaggy ridges, she felt the future stirring."
- C. "Alexandra drove off alone. The rattle of her wagon was lost in the howling of the wind, but her lantern, held firmly between her feet, made a moving point of light along the highway, going deeper and deeper into the dark country."
- D. "Alexandra drew her shawl closer about her and stood leaning against the frame of the mill, looking at the stars which glittered so keenly through the frosty autumn air. She always loved to watch them, to think of their vastness and distance, and of their ordered march. It fortified her to reflect upon the great operations of nature, and when she thought of the law that lay behind them, she felt a sense of personal security."

Question ID a6ebdf5c

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: a6ebdf5c

East Australian humpback whales migrate up to 10,000 kilometers each year to reach their breeding grounds. Researchers long believed that migrating whales live only on the extra energy they stored up during the feeding season. But marine biologist Vanessa Pirotta and her team aren't so sure. They analyzed 20 years of observations of the migrating whales made by citizen scientists (members of the public who help collect data for scientific research). The team claims that the whales may not live only on their stored energy during migration.

Which finding, if true, would most directly support the team's claim?

- A. Citizen scientists have observed many different types of marine animals feeding alongside the whales.
- B. Citizen scientists have made many observations of the whales feeding as they migrate to their breeding grounds.
- C. Citizen scientists have made more observations of the whales migrating to their breeding grounds than of the whales returning to their feeding grounds.
- D. Citizen scientists have recently begun to observe the whales migrating to their breeding grounds earlier in the year.

Question ID 7cad1b7a

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 7cad1b7a

Archaeologist Weiwei Wang and her colleagues analyzed footed grinding slabs and other food-preparation tools excavated from Óc Eo, a Southeast Asian port city that flourished between the first and sixth centuries CE. Wang and colleagues recovered microscopic remnants of turmeric and other spices from the surfaces of the tools. Turmeric is native to South Asia, more than a thousand miles west of Óc Eo, and the researchers showed that the footed grinding slabs at Óc Eo are very similar to footed grinding slabs common throughout South Asia from around 500 BCE to 300 CE. Wang and colleagues’ findings therefore indicate that there must have been a trade link, whether direct or indirect, between the two regions.

Which finding, if true, would directly weaken the conclusion about Wang and her colleagues’ findings that is presented in the text?

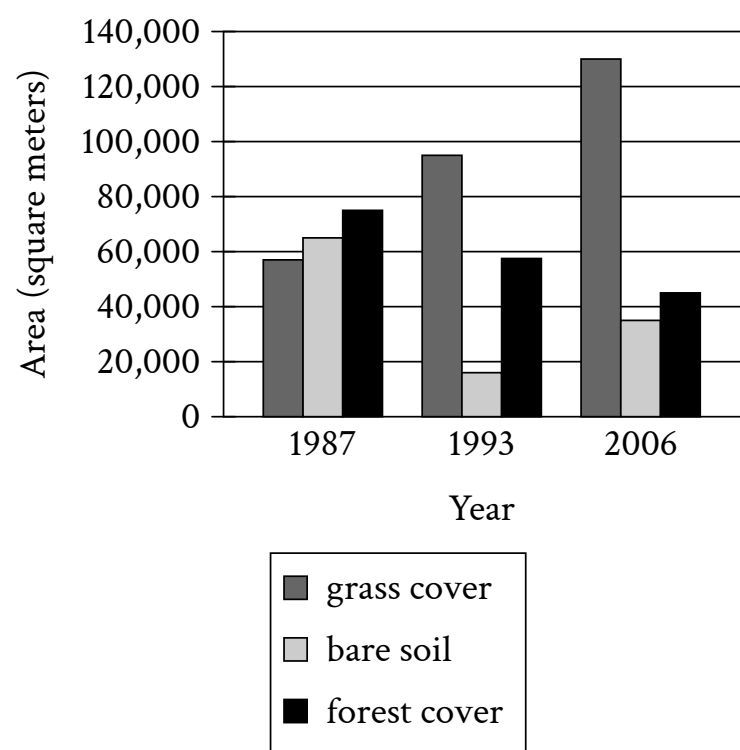
- A. Some of the spices recovered from Óc Eo are native to the Maluku Islands, which are located approximately 2,000 miles southeast of Óc Eo.
- B. In the first through third centuries CE, there was a significant migration of people from South Asia to Southeast Asia.
- C. Other types of artifacts originating in South Asia and dating to the first through sixth centuries CE have been found throughout Southeast Asia.
- D. The people of Óc Eo and several communities in South Asia regularly traded with people in the region that is now the Southeast Asian country of Malaysia no later than the first century CE.

Question ID 69a2c79f

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 69a2c79f

Characteristics of the Banks of the Provo River Downstream of the Jordanelle Dam



The Jordanelle Dam was built on the Provo River in Utah in 1992. Earth scientist Adriana E. Martinez and colleagues tracked changes to the environment on the banks of the river downstream of the dam, including how much grass and forest cover were present. They concluded that the dam changed the flow of the river in ways that benefited grass plants but didn't benefit trees.

Which choice best describes data from the graph that support Martinez and colleagues' conclusion?

- A. The lowest amount of grass cover was approximately 58,000 square meters, and the highest amount of forest cover was approximately 75,000 square meters.
- B. There was more grass cover than forest cover in 1987, and this difference increased dramatically in 1993 and again in 2006.
- C. There was less grass cover than bare soil in 1987 but more grass cover than bare soil in 1993 and 2006, whereas there was more forest cover than bare soil in all three years.
- D. Grass cover increased from 1987 to 1993 and from 1993 to 2006, whereas forest cover decreased in those periods.

Question ID 080e14a2

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 080e14a2

Rivers rich in sediment appear yellow, while increases in red algae make rivers appear red. To track things like the sediment or algae content of large US rivers, John R. Gardner and colleagues used satellite data to determine the dominant visible wavelengths of light measured for various segments of these rivers. The researchers classified wavelengths of 495 nanometers (nm) and below as red, wavelengths between 495 and 560 nm as blue, and wavelengths of 560 nm and above as yellow. The researchers concluded that for the Missouri River, segments flowing into lakes tend to carry more sediment than those flowing out of lakes.

Which finding, if true, would most directly support the researchers’ conclusion?

- A. The segments of the Missouri River that had higher levels of chlorophyll-a, which contributes to the green color of photosynthetic organisms, have dominant wavelengths of light between 490 and 560 nm.
- B. In lakes through which segments of the Missouri River pass, the dominant wavelength of light tended to be above 560 nm near the lakes’ shores and below 560 nm in the lakes’ centers.
- C. The majority of the segments of the Missouri River were found to have dominant wavelengths of light significantly higher than 560 nm.
- D. Segments of the Missouri River flowing into lakes typically had dominant wavelengths of light above 560 nm, while segments flowing out of lakes typically had dominant wavelengths below 560 nm.

Question ID 3bc75372

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 3bc75372

“Looking Back on Girlhood” is an 1892 short story by Sarah Orne Jewett. In the story, the narrator explains that she prefers her hometown to other places she has visited: _____

Which quotation from “Looking Back on Girlhood” most effectively illustrates this claim?

- A. “There is always something fresh, something to be traced or discovered, something particularly to be remembered.”
- B. “Two large rivers join just below the village at the head of tide-water, and these, with the great inflow from the sea, make a magnificent stream, bordered by lovely green fields that slope gently to long lines of willows at the water’s edge.”
- C. “I have had a good deal of journeying in my life, and taken great delight in it, but I have never taken greater delight than in my rides and drives and tramps and voyages within the borders of my native town.”
- D. “There is never-ending pleasure in making one’s self familiar with such a region.”

Question ID 4d2e2f18

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 4d2e2f18

Partial List of Candidate Species for De-extinction

Common name	Scientific name	Became extinct
Huia	<i>Heteralocha acutirostris</i>	1907
Caribbean monk seal	<i>Monachus tropicalis</i>	1952
Passenger pigeon	<i>Ectopistes migratorius</i>	1914
Saber-toothed cat	<i>Smilodon</i>	11,000 years before present
Woolly mammoth	<i>Mammuthus primigenius</i>	6,400 years before present

The passage of time is among the many obstacles faced by scientists who are pursuing de-extinction efforts—that is, efforts to use breeding or a mixture of cloning and genetic engineering to bring back extinct species. Specifically, researchers are concerned that the longer a species has been extinct, the less likely it is that a suitable habitat still exists for that species. Among candidate species for de-extinction, this problem would be especially concerning for the _____

Which choice most effectively uses data from the table to complete the statement?

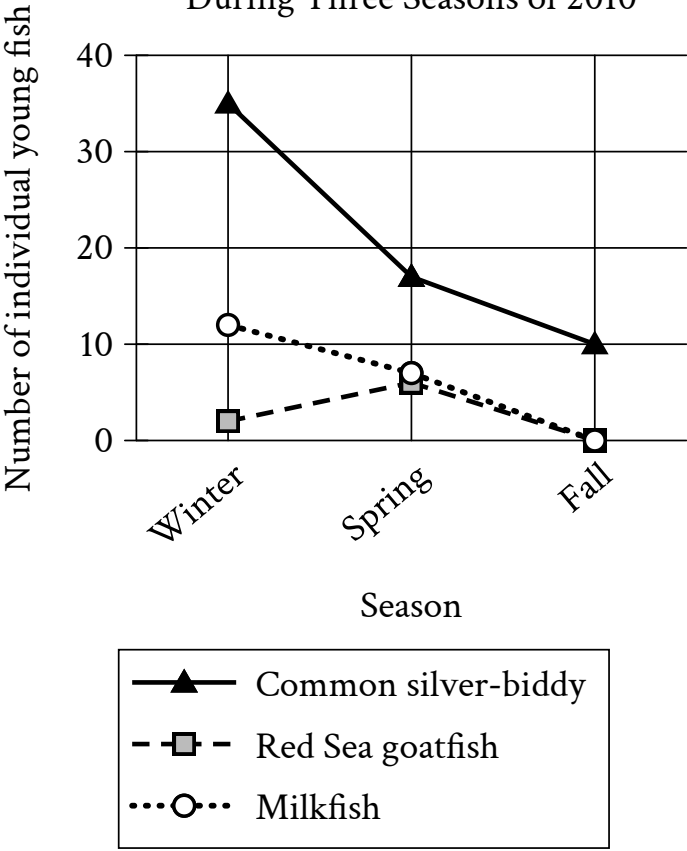
- A. passenger pigeon (*Ectopistes migratorius*), which became extinct only a few years after the huia (*Heteralocha acutirostris*).
- B. saber-toothed cat (*Smilodon*), which became extinct 11,000 years ago.
- C. woolly mammoth (*Mammuthus primigenius*), which became extinct several thousand years before the saber-toothed cat (*Smilodon*).
- D. Caribbean monk seal (*Monachus tropicalis*), which became extinct in 1952.

Question ID 532afcc2

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 532afcc2

Number of Young Fish Collected at Mangrove Sites in the Egyptian Red Sea During Three Seasons of 2010



Mangroves are trees or bushes that grow on the coastlines of seas and rivers. Areas with mangroves are great places for young fish since they help keep these fish fed and protected while they grow. To study the importance of mangroves to young fish, researchers Mohamed A.Abu El-Regal and Nesreen K. Ibrahim collected and identified young fish from three different mangrove sites in the Egyptian Red Sea. They collected fish in the winter, spring, and autumn of 2010, collecting a total of 269 fish from 21 different species. For some species, more fish were collected in the winter than the other two seasons, for instance: _____

Which choice most effectively uses the data in the graph to complete the example?

- A. more common silver-biddy and milkfish were collected in the winter than in either of the other two seasons.
- B. the common silver-biddy was collected more frequently than the other two species in all three seasons.
- C. in the spring, researchers collected more Red Sea goldfish than they collected from the other two species.
- D. in the fall, researchers collected 10 common silver-biddy but collected no milkfish or Red Sea goatfish.

Question ID 134f63f5

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 134f63f5

An archaeological team led by Piotr Bieliński and Sultan al-Bakri found remnants of a 4,000-year-old Bronze Age board game at a site in Oman. Little is left of the game except a stone board, which is carved with a grid and has places to hold game pieces. Some scholars claim that the game was largely played by traders.

Which finding, if true, would most directly support the scholars’ claim?

- A. Other examples of the game dating to the same period have been found in the remains of several homes in the region, including in one home that may have belonged to a trader.
- B. Similar games have been found in other sites dating to the same period that were connected to the site in Oman via trade routes.
- C. The other known examples of the game dating to the same period have been found along routes that seem to have been used primarily by traders at the time.
- D. Remnants of other goods have been found at the site in Oman that probably also reached the location through trade.

Question ID aad72f33

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: aad72f33

There Is Confusion is a 1924 novel by Jessie Redmon Fauset. In the novel, the narrator portrays the character Joanna as someone who admires ambition in other people to the exclusion of all other qualities: _____

Which quotation from *There Is Confusion* most effectively illustrates the claim?

- A. “Joanna was mightily interested in people who had a ‘purpose’ in life. Otherwise not at all.”
- B. “Indeed from the very beginning Joanna showed her preference for her father.”
- C. “Joanna was like her father not only so far as ambition was concerned but also in her willingness to work.”
- D. “She had a good sense of logic, a strong power of concentration, and a remarkably retentive and visualizing memory.”

Question ID 6ab18e1e

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 6ab18e1e

Participants’ Evaluation of the Likelihood That Robots Can Work Effectively in Different Occupations

Occupation	Somewhat or very unlikely (%)	Neutral (%)	Somewhat or very likely (%)
television news anchor	24	9	67
teacher	37	16	47
firefighter	62	9	30
surgeon	74	9	16
tour guide	10	8	82
Rows in table may not add up to 100 due to rounding.			

Georgia Tech roboticists De’Aira Bryant and Ayanna Howard, along with ethicist Jason Borenstein, were interested in people’s perceptions of robots’ competence. They recruited participants and asked them how likely they think it is that a robot could do the work required in various occupations. Participants’ evaluations varied widely depending on which occupation was being considered; for example, _____

Which choice most effectively uses data from the table to complete the example?

- A. 47% of participants believe that it is somewhat or very likely that a robot could work effectively as a teacher, but 37% of respondents believe that it is somewhat or very unlikely that a robot could do so.
- B. 9% of participants were neutral about whether a robot could work effectively as a television news anchor, which is the same percent of participants who were neutral when asked about a robot working as a surgeon.
- C. 82% of participants believe that it is somewhat or very likely that a robot could work effectively as a tour guide, but only 16% believe that it is somewhat or very likely that a robot could work as a surgeon.
- D. 62% of participants believe that it is somewhat or very unlikely that a robot could work effectively as a firefighter.

Question ID eb14b292

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: eb14b292

In the 1970s, a roughly 60,000-year-old piece of hyena bone marked with nine notches was discovered at a site in western France once inhabited by Neanderthals. Although many believe that only modern humans developed systems for notating numbers, one archaeologist asserts that this artifact may be a sign that Neanderthals also recorded numerical information. The notches on the bone are unevenly spaced but approximately parallel, and microscopic analysis reveals that they were made with a single stone tool; according to the archaeologist, this suggests that the notches were all made at one time by one individual as a means of counting something.

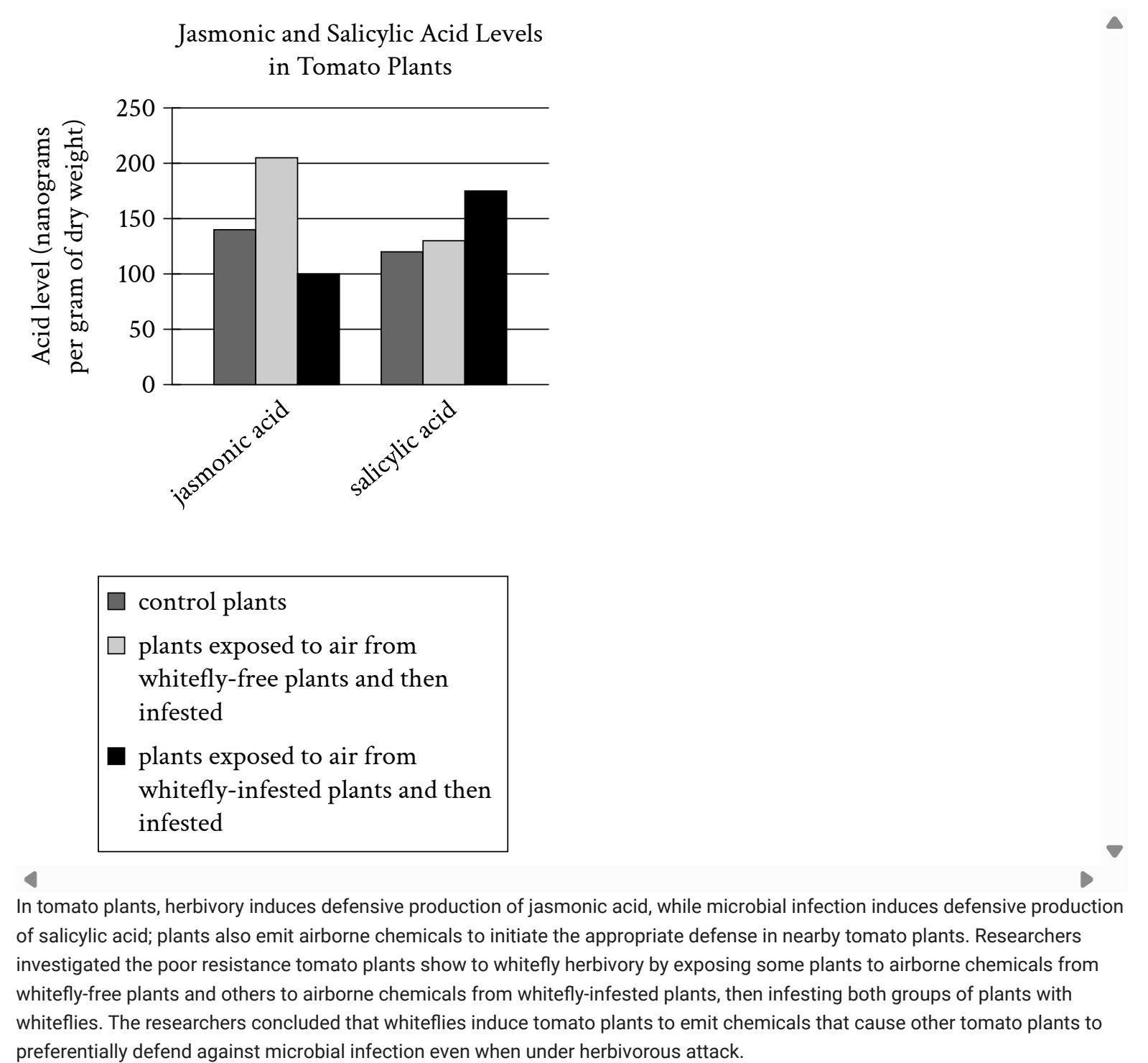
Which finding, if true, would most directly weaken the underlined claim?

- A. Parallel lines are a common feature in modern humans’ early systems for recording numerical information.
- B. More than nine approximately parallel notches made with a different stone tool are present on another artifact found at a site in western France.
- C. It would have taken careful effort to make evenly spaced lines on bone with the stone tools typically used by Neanderthals.
- D. Decorative art discovered at another Neanderthal site in western France primarily features patterns of unevenly spaced parallel lines.

Question ID 77001549

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 77001549



Which choice best describes data from the graph that support the researchers' conclusion?

- A. When plants exposed to air from whitefly-free plants were infested, they produced more jasmonic acid than did control plants, whereas when plants exposed to air from whitefly-infested plants were infested, they produced less jasmonic acid and more salicylic acid than did control plants.
- B. When plants exposed to air from whitefly-infested plants were infested, they produced less jasmonic acid than salicylic acid, whereas when plants exposed to air from whitefly-free plants were infested, they produced about the same amount of jasmonic acid and salicylic acid.
- C. When plants exposed to air from whitefly-free plants were infested, they produced both jasmonic acid and salicylic acid, whereas when plants exposed to air from whitefly-infested plants were infested, they exclusively produced salicylic acid.
- D. When plants exposed to air from whitefly-infested plants were infested, they produced less jasmonic acid than did control plants, whereas when plants exposed to air from whitefly-free plants were infested, they produced more jasmonic acid and salicylic acid than did control plants.

Question ID de4dc44a

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: de4dc44a

Mean Time (in Seconds) Spent per Flower for Four Pollinator Genera

Pollinator genus	Seconds per intact pin flower	Seconds per damaged pin flower	Seconds per intact thrum flower	Seconds per damaged thrum flower
<i>Habropoda</i>	2.7	5.4	4.1	9.5
<i>Osmia</i>	5.2	8.2	7.1	8.3
<i>Pierid</i>	2.6	4.0	2.4	1.9
<i>Xylocopa</i>	2.3	2.8	2.5	2.2

To study how floral damage affects the behavior of pollinators, such as bees, a team of researchers punched holes in the floral tissue of flowers from the vine yellow jessamine (*Gelsemium sempervirens*), a plant that produces flowers that have either a long pistil and a short stamen (pin morphs) or a short pistil and a long stamen (thrum morphs). The researchers then compared the time different insect pollinators spent visiting intact pin and thrum flowers to the time such pollinators spent visiting the artificially damaged pin and thrum flowers. The researchers concluded that the effect of floral damage on time spent per flower varied by both floral morph and the genus of the pollinator.

Which choice best describes data from the table that support the researchers’ conclusion?

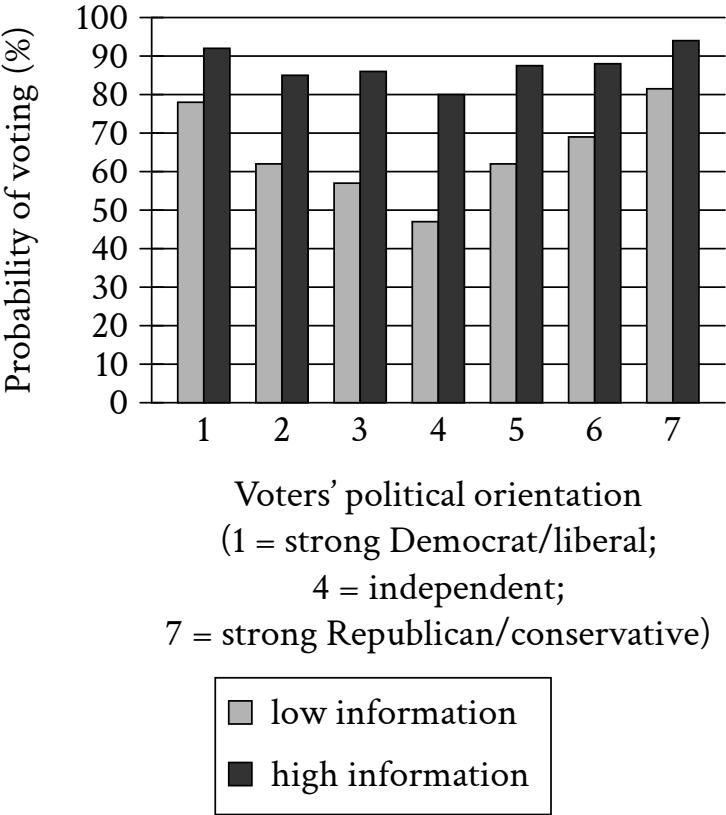
- A. For pin flowers, damage led to longer times per flower in all pollinator genera, whereas for thrum flowers, damage led to longer times per flower only in *Habropoda* and *Osmia*.
- B. Compared with pollinators belonging to the genus *Osmia*, pollinators belonging to the genus *Xylocopa* spent less time on damaged pin flowers but more time on damaged thrum flowers.
- C. Damage led to shorter times per thrum flower in three pollinator genera (*Osmia*, *Pierid*, and *Xylocopa*), whereas it led to longer times per thrum flower in one pollinator genus (*Habropoda*).
- D. Pollinators belonging to the genus *Habropoda* spent 2.7 seconds on intact pin flowers and 4.1 seconds on intact thrum flowers.

Question ID 13afbff4

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 13afbff4

Voters’ Political Orientation, Level of Political Information, and Probability of Voting



Economists Kerwin Kofi Charles and Melvin Stephens Jr. investigated a variety of factors that influence voter turnout in the United States. Using survey data that revealed whether respondents voted in national elections and how knowledgeable respondents are about politics, Charles and Stephens claim that the likelihood of voting is driven in part by potential voters’ confidence in their assessments of candidates—essentially, the more informed voters are about politics, the more confident they are at evaluating whether candidates share their views, and thus the more likely they are to vote.

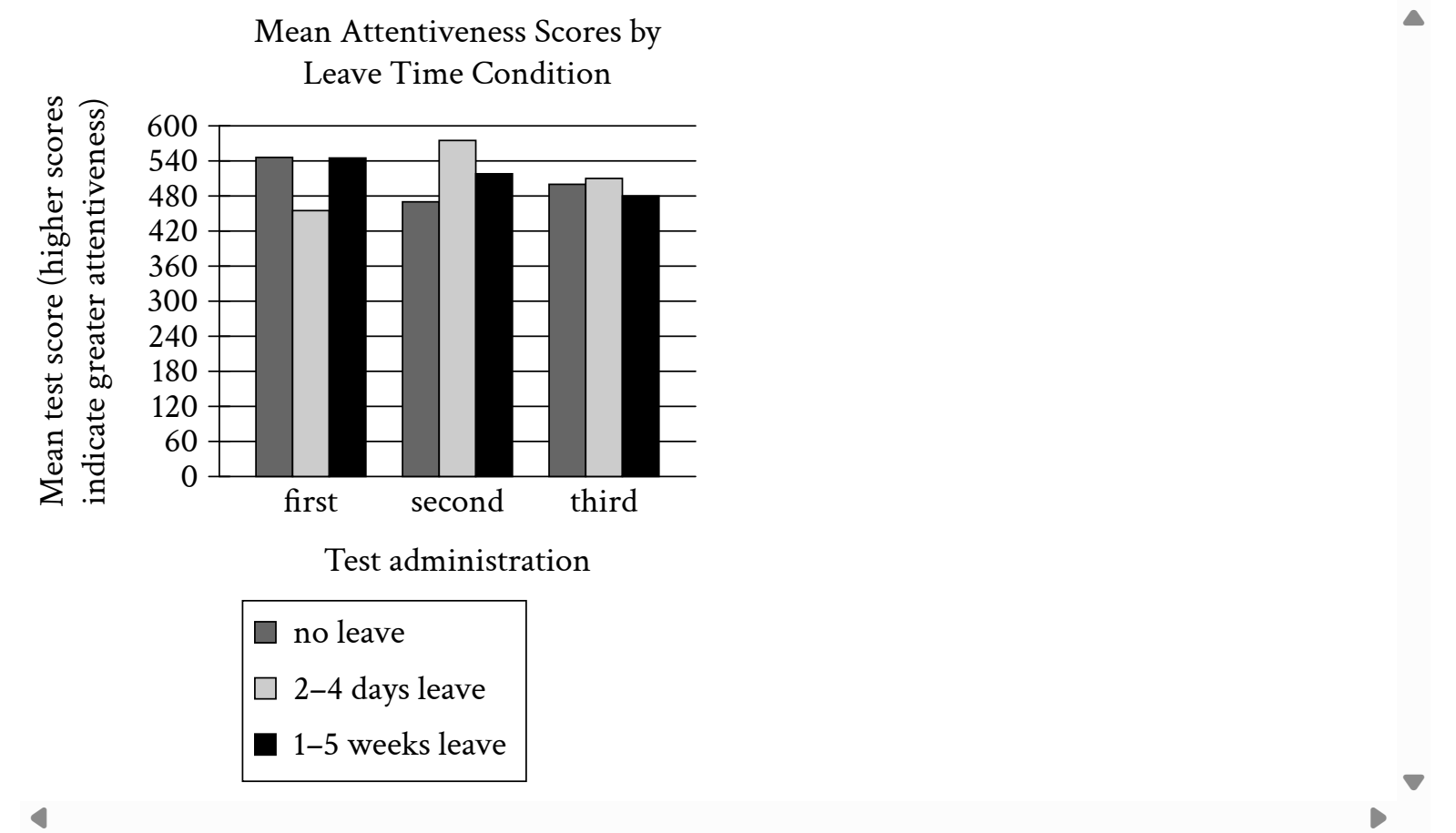
Which choice best describes data in the graph that support Charles and Stephens’s claim?

- A. At each point on the political orientation scale, high-information voters were more likely than low-information voters to vote.
- B. Only low-information voters who identify as independents had a voting probability below 50%.
- C. The closer that low-information voters are to the ends of the political orientation scale, the more likely they were to vote.
- D. High-information voters were more likely to identify as strong Democrats or strong Republicans than low-information voters were.

Question ID 7d9898dd

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 7d9898dd



To investigate potential cognitive benefits of taking leave from work, psychologist Jan Packer and colleagues conducted a six-month study of Australian university staff members who took no leave from work during the study, took 2–4 days of leave, or took 1–5 weeks of leave. Tests of attentiveness were administered to participants three times during the study: at random for the no-leave staff, and for the rest, one week before their leave, one week following their return to work, and one week after the second test administration. After analyzing the results, the researchers concluded that longer leave times might not confer a greater cognitive benefit than shorter leave times do.

Which choice best describes data from the graph that support the researchers’ conclusion?

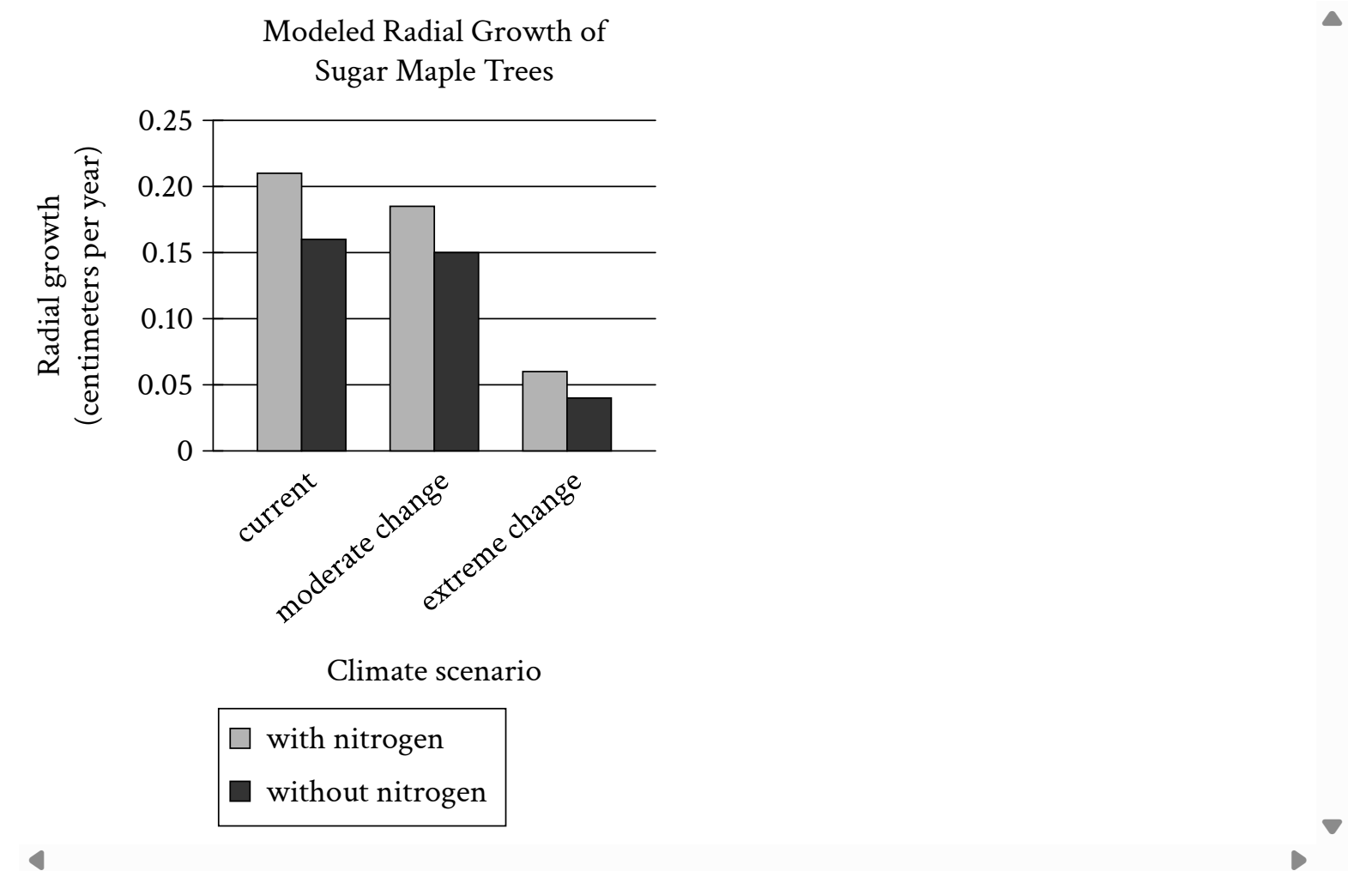
- A. In the second test administration, participants who took 2–4 days of leave had higher average attentiveness scores than did those who took no leave, but in the third test administration, those who took no leave had higher average scores than those who took 1–5 weeks of leave.
- B. In the first test administration, participants who took 2–4 days of leave had lower average attentiveness scores than did those who took 1–5 weeks of leave and those who took no leave.
- C. In both the second and third test administrations, participants who took 2–4 days of leave had higher average attentiveness scores than did participants who took 1–5 weeks of leave.

D. In the second and third test administrations, participants who took 2–4 days of leave had higher average attentiveness scores than did those who took no leave.

Question ID 6c717268

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 6c717268



Inés Ibáñez and colleagues studied a forest site in which some sugar maple trees receive periodic fertilization with nitrogen to mimic the broader trend of increasing anthropogenic nitrogen deposition in soil. Ibáñez and colleagues modeled the radial growth of the trees with and without nitrogen fertilization under three different climate scenarios (the current climate, moderate change, and extreme change). Although they found that climate change would negatively affect growth, they concluded that anthropogenic nitrogen deposition could more than offset that effect provided that change is moderate rather than extreme.

Which choice best describes data from the graph that support Ibáñez and colleagues' conclusion?

- A. Growth with nitrogen under the current climate exceeded growth with nitrogen under moderate change, but the latter exceeded growth without nitrogen under extreme change.
- B. Growth without nitrogen under the current climate exceeded growth without nitrogen under moderate change, but the latter exceeded growth with nitrogen under extreme change.
- C. Growth with nitrogen under moderate change exceeded growth without nitrogen under moderate change, but the latter exceeded growth without nitrogen under extreme change.

D. Growth with nitrogen under moderate change exceeded growth without nitrogen under the current climate, but the latter exceeded growth with nitrogen under extreme change.

Question ID 68c23005

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 68c23005

Roasted green chiles are a popular ingredient in Southwestern cuisine, but the traditional roasting method of burning propane is not environmentally friendly. To see if solar power could provide a better alternative, engineer Kenneth Armijo and his team roasted batches of green chiles using between 38 and 42 heliostats, which are devices that concentrate sunlight. The team was successful in reaching the same roasting temperature used in traditional propane roasting, but they found that propane yielded faster results. While the fastest solar-roasted green chiles took six minutes, batches using propane took only four. Armijo hypothesizes that they can reduce the roasting time for solar-roasted green chiles by using more heliostats.

Which finding, if true, would most directly support Armijo’s hypothesis?

- A. The temperature inside the roasting drum is distributed more evenly when roasting green chiles with solar power than with propane.
- B. Attempts to roast green chiles using 50 heliostats yields results in fewer than six minutes.
- C. Green chile connoisseurs prefer the flavor of solar-roasted green chiles over the flavor of propane-roasted green chiles.
- D. The skins of solar-roasted green chiles are easier to peel than the skins of propane-roasted green chiles.

Question ID 188877fa

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 188877fa

A student in a political science course is writing a paper on Aristotle's *The Politics*, in which Aristotle offers his opinion on political instability and gives advice on how constitutions can be preserved. Aristotle observes that different forms of government can fall in different ways—for example, oligarchies might grant power to military leaders during wartime who refuse to relinquish that power during peacetime—but some methods of preserving order apply across all forms of government. The student claims that in particular Aristotle asserts that in a healthy state obedience to law must be as close to absolute as possible and that even minor infractions should not be ignored.

Which quotation from a philosopher’s analysis of *The Politics* would best support the student’s claim?

- A. “When constructing his argument regarding the characteristics of a well-functioning government, Aristotle asserts that ‘Transgression creeps in unperceived and at last ruins the state,’ illustrating this idea with a comparison to frequent small expenditures slowly and almost imperceptibly chipping away at a fortune until it is ultimately depleted.”
- B. “When Aristotle writes on the necessity of avoiding corruption in government, he proposes that ‘every state should be so administered and so regulated by law that its magistrates cannot possibly make money.’ In particular, he thinks oligarchies are particularly susceptible to corruption through bribery.”
- C. “When Aristotle considers the health of constitutions, he states that ‘Constitutions are preserved when their destroyers are at a distance, and sometimes also because they are near, for the fear of them makes the government keep in hand the constitution.’ He holds that rulers who wish to see constitutions preserved must continually remind the populace of the dangers that would result from a constitutional collapse.”
- D. “When contrasting different forms of government, Aristotle holds that ‘oligarchies may last, not from any inherent stability in such forms of government, but because the rulers are on good terms both with the unenfranchised and with the governing classes.’ That is, oligarchic leaders who wish to hold on to power will introduce members of disenfranchised classes into government in a participatory role.”

Question ID 31789d69

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 31789d69

Under normal atmospheric pressure at Earth’s surface, water molecules form a tetrahedral network stabilized by hydrogen bonds between adjacent molecules. Extreme high pressure, such as can be found in deep ocean waters, destabilizes these bonds and compresses water’s structure, allowing water molecules within organisms to permeate proteins and impede crucial biological functions; yet deep-sea organisms known as piezophiles have adapted to extreme pressure. Studies have found a positive correlation between the depths that various piezophiles inhabit and concentrations of a compound called trimethylamine N-oxide (TMAO) in their muscle tissues, which has led a team of researchers to hypothesize that TMAO reduces water’s compressibility.

- Which finding, if true, would most directly support the researchers’ hypothesis?
- A. Water molecules are found to be impervious to TMAO even when the water molecules’ tetrahedral configuration has been distorted by high pressure.
 - B. Examination of TMAO’s molecular structure shows that TMAO molecules retain their shape even as pressure increases.
 - C. A positive correlation is found between concentrations of TMAO and the rate at which water’s molecular structure compresses as pressure increases.
 - D. Analysis of water’s molecular structure under high pressure reveals that hydrogen bonds are more stable when TMAO is present than when it is not.

Question ID 73d9532c

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 73d9532c

Land Area Covered by Native Flowering Plants at a Site in Antarctica			
Species	Area covered in 2009 (in square meters)	Area covered in 2018 (in square meters)	Percent increase in area covered from 2009 to 2018
<i>Deschampsia antarctica</i>	1,230	1,576	28%
<i>Colobanthus quitensis</i>	6.9	10.7	55%

The only flowering plant species native to Antarctica, *Colobanthus quitensis* and *Deschampsia antarctica* grow in places where the earth remains free of ice for much of the year. Botanist Niccoletta Cannone wondered how the warming of Antarctica’s climate in recent years had affected these species, so she visited a site in Antarctica, first in 2009 and later in 2018, to count the number of plants growing there. Cannone found that the area of land covered by the two species had significantly expanded during the nine-year period. While both species likely benefited from warming temperatures, *Colobanthus quitensis* _____

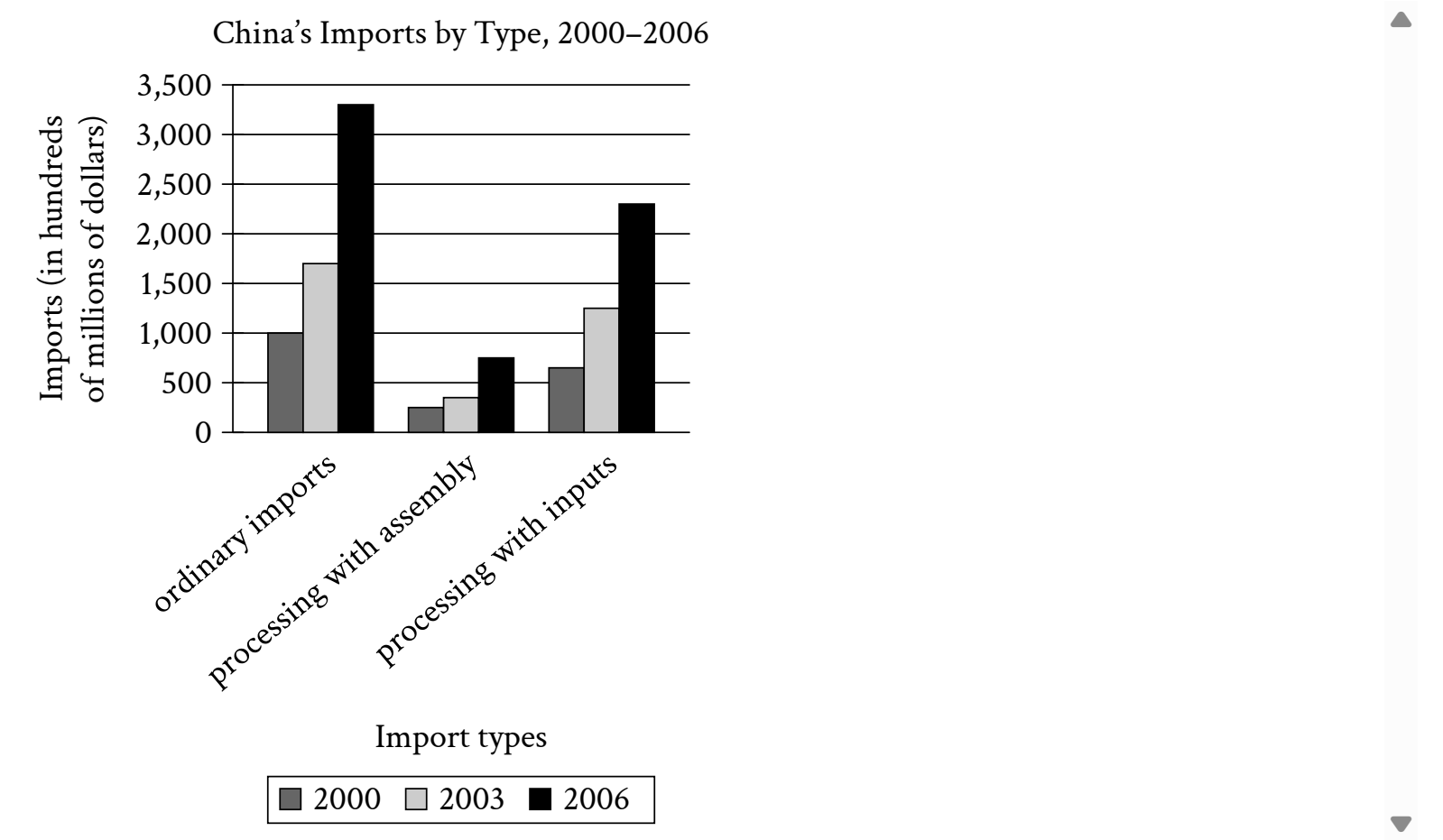
Which choice most effectively uses data from the table to complete the comparison?

- A. suppressed the growth of *Deschampsia antarctica*, which covered a smaller area of land in 2018 than it had in 2009.
- B. saw a greater expansion than *Deschampsia antarctica* did, increasing the area of land it covered by more than half.
- C. showed a greater increase in the average size of individual plants than *Deschampsia antarctica* did.
- D. covered land newly freed from ice at a rate 55% faster than that of *Deschampsia antarctica*.

Question ID 03a802ae

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 03a802ae



A student is researching the Chinese government’s 1992 shift to a market economy that emphasizes trade liberalization. One means of trade liberalization involves expanding from ordinary imports into an emphasis on processing imports, which have two types: processing with assembly (in which a firm obtains raw materials from a foreign trading partner without payment and sells the final goods to that partner, charging for assembly) and processing with inputs (in which a firm expends capital to buy raw materials from a trading partner, processes them into final goods, and sells those goods to whichever trading partner it chooses). The student asserts that while initial efforts at trade liberalization were shaped by Chinese firms’ limited capital, this situation resolved during the 2000s.

- Which choice best describes data from the graph that support the student’s assertion?
- A. Processing imports with inputs were greater than both ordinary imports and processing imports with assembly in 2006.
 - B. From 2000 to 2006, processing imports with inputs rose much more sharply than processing imports with assembly did.
 - C. From 2000 to 2006, neither processing imports with inputs nor processing imports with assembly were greater than ordinary imports.

D. Processing imports with assembly were greater in 2006 than processing imports with inputs in 2000.

Question ID 413240ee

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 413240ee

Guilds in French Cities in the Late Eighteenth Century

City	Date	Inhabitants	Number of guilds	Inhabitants per guild
Paris	1766	600,000	133	4,511
Bordeaux	1762	80,000	49	1,633
Rouen	1775	74,000	112	661
Lyon	1789	143,000	72	1,986

Guilds—local associations of artisans and merchants in the same industry—were widespread in France from the medieval period until the late eighteenth century. But guilds were much more numerous relative to the population in some cities than in others: for example, _____

Which choice most effectively uses data from the table to complete the statement?

- A. there were 49 guilds in Bordeaux but 72 guilds in Lyon despite the two cities having nearly equal numbers of inhabitants.
- B. Lyon had far fewer inhabitants than Paris did but had many more guilds.
- C. there was one guild for every 661 inhabitants in Rouen but one guild for every 4,511 inhabitants in Paris.
- D. Paris had 133 guilds and 600,000 inhabitants, or one guild for every 4,511 inhabitants.

Question ID ed02db2b

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: ed02db2b

Swahili Speakers in Three African Countries

Country	Approximate number of speakers (in millions)	Estimated % of population
Democratic Republic of the Congo	22	25
Kenya	55	100
Tanzania	61	100

Swahili is estimated to be the first language of up to 15 million people worldwide. It’s also an officially recognized language in Tanzania, Kenya, and the Democratic Republic of the Congo, which means these countries use Swahili in government documents and proceedings. But even in countries where almost everyone speaks Swahili, for many it isn’t their first language but is instead their second, third, or even fourth language.

Which choice most effectively uses data from the table to support the underlined claim?

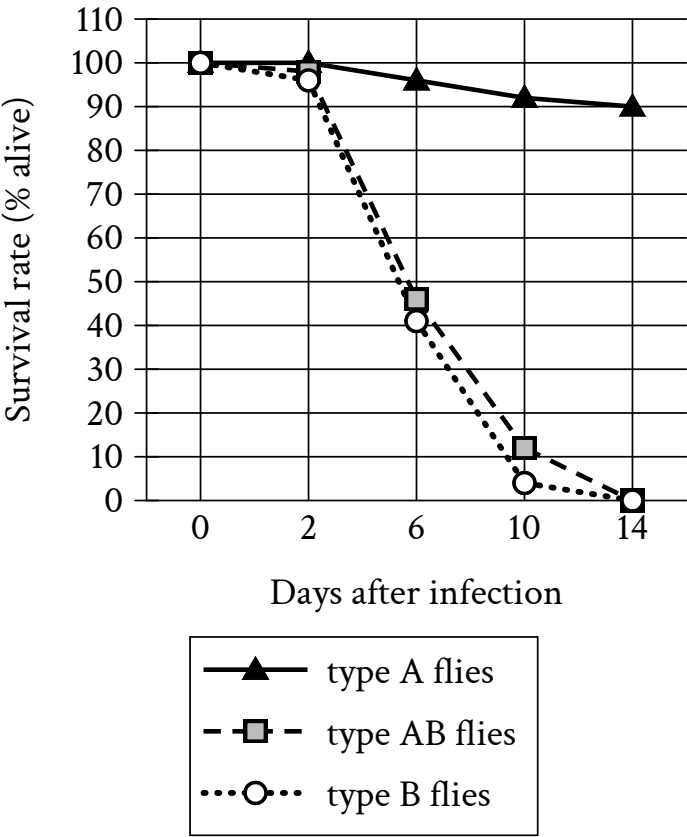
- A. Tanzania has approximately 61 million Swahili speakers, which is much more than the estimated total number of people worldwide for whom Swahili is their first language.
- B. Tanzania is estimated to have at most 15 million Swahili speakers, while the country’s total population is approximately 61 million people.
- C. Approximately 100 percent of the people who speak Swahili as their first language live in Kenya, which has a total population of approximately 55 million people.
- D. Approximately 100 percent of Kenya’s population speaks Swahili, while only about 25 percent of the Democratic Republic of the Congo’s population speaks Swahili.

Question ID 96d09770

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 96d09770

Average Survival of Fruit Flies following Infection



In a study of the evolution of *DptA* and *DptB*—*Diptericin* genes encoding antimicrobial peptides that combat pathogens and foster beneficial microbes in fruit flies (*Drosophila*)—researchers assessed *Drosophila melanogaster* resistance to pathogenic infections by *Providencia rettgeri* and *Acetobacter sicerae*, bacteria common in the flies’ environments. Subjects included flies identified by mutations silencing *DptA*, *DptB*, or both *DptA* and *DptB* (termed types A, B, and AB, respectively). In conjunction with the observation that resistance to *P. rettgeri* correlates with *DptA* activity but is not significantly affected by *DptB* activity, data in the graph of survival rates post-*A. sicerae* infection suggest that _____

Which completion of the text is best supported by data in the graph?

- A. *DptA* confers defense against *A. sicerae* regardless of the presence of *DptB*.
- B. *DptB* protects against only one bacteria species, whereas *DptA* protects against multiple species.
- C. *DptB* may have developed as a specific defense against *A. sicerae*.
- D. defense against *A. sicerae* is strongest when both *DptA* and *DptB* are present.

Question ID 26ab8fef

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 26ab8fef

Initially observed in 2017, the interstellar object ‘Oumuamua is the first object of its kind to be seen in our solar system. Researchers have been puzzled because its acceleration cannot be entirely explained by the gravitational pull of nearby bodies: there must be a nongravitational influence on its velocity and trajectory. Some previously suggested explanations for this nongravitational acceleration involve mechanisms that are unlikely or unrealistic, such as geometric effects from ‘Oumuamua being potentially composed of several spatially separated bodies. Now, Jennifer Bergner and colleagues propose that the nongravitational acceleration is due to the gaseous expulsion of entrapped hydrogen from ‘Oumuamua’s water-rich icy body.

- Which statement, if true, would most strongly support the claim made by Bergner and colleagues about the cause of ‘Oumuamua’s acceleration?
- A. Existing proposed models of outgassing from ‘Oumuamua include the direct conversion of nitrogen or carbon monoxide from a solid to a gaseous state without becoming liquid, but these models have theoretical or observational inconsistencies.
 - B. ‘Oumuamua’s trajectory is inconsistent with a nongravitational acceleration that would be caused by the release of hydrogen gas resulting from the processing of water ice (H₂O), but the interstellar object’s observable properties can be explained if it has a significant component of molecular hydrogen ice (H₂).
 - C. Since nongravitational accelerations of interstellar objects are several orders of magnitude weaker than gravitational accelerations, deviation from behavior that could be fully attributed to gravitational pull has been detected on a limited number of objects similar to ‘Oumuamua.
 - D. Exposure to interstellar cosmic radiation can result in the formation of embedded pockets of hydrogen gas in water ice; moreover, when traveling through the solar system, ‘Oumuamua experienced warming sufficient to alter its icy structure and allow for outgassing.

Question ID 0fab6d5c

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 0fab6d5c

“The Yellow Wallpaper” is an 1892 short story by Charlotte Perkins Gilman. In the story, the narrator expresses mixed feelings about her surroundings: _____

Which quotation from “The Yellow Wallpaper” most effectively illustrates the claim?

- A. “This wallpaper has a kind of sub-pattern in a different shade, a particularly irritating one, for you can only see it in certain lights, and not clearly then.”
- B. “By moonlight—the moon shines in all night when there is a moon—I wouldn’t know it was the same paper.”
- C. “I’m really getting quite fond of the big room, all but that horrid [wall]paper.”
- D. “The color is repellant, almost revolting; a smouldering, unclean yellow, strangely faded by the slow-turning sunlight.”

Question ID 26cc15ca

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 26cc15ca

Gorgets, or necklaces with large pendants, have been part of the ceremonial attire of tribes from the US Southeast for centuries. One of the oldest examples, the Fairfield Gorget, was found in Fairfield, Missouri, in 1958. Its overall design resembles that of other art from the region during the Mississippian period (900–1600 CE). Yet the image on the gorget is of a jaguar—a species whose range doesn’t extend to Missouri. Jaguar images are common in ancient Mexican art, and Mexico lies squarely in the species’ range. Therefore, some scholars argue that long-distance trade in Mexican art objects brought the imagery to Missouri, where a local artist could have adopted it and incorporated it into the Fairfield Gorget.

Which finding, if true, would most strongly support the underlined explanation?

- A. The Fairfield Gorget is dated not to the Mississippian period but instead to the earlier Woodland period, which ended around 900 CE.
- B. The range of the jaguar is shown to have expanded dramatically after the Mississippian period came to a close around 1600 CE.
- C. An ancient Mexican art object is found at a site that dates to the Mississippian period and is close to where the Fairfield Gorget was found.
- D. Certain works by present-day artists from Southeastern tribes reflect outside cultural influences, including contemporary Mexican art.

Question ID 0ebb6a16

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 0ebb6a16

Almost all works of fiction contain references to the progression of time, including the time of day when events in a story take place. In a 2020 study, Allen Kim, Charuta Pethe, and Steven Skiena claim that an observable pattern in such references reflects a shift in human behavior prompted by the spread of electric lighting in the late nineteenth century. The researchers drew this conclusion from an analysis of more than 50,000 novels spanning many centuries and cultures, using software to recognize and tally both specific time references—that is, clock phrases, such as 7 a.m. or 2:30 p.m.—and implied ones, such as mentions of meals typically associated with a particular time of day.

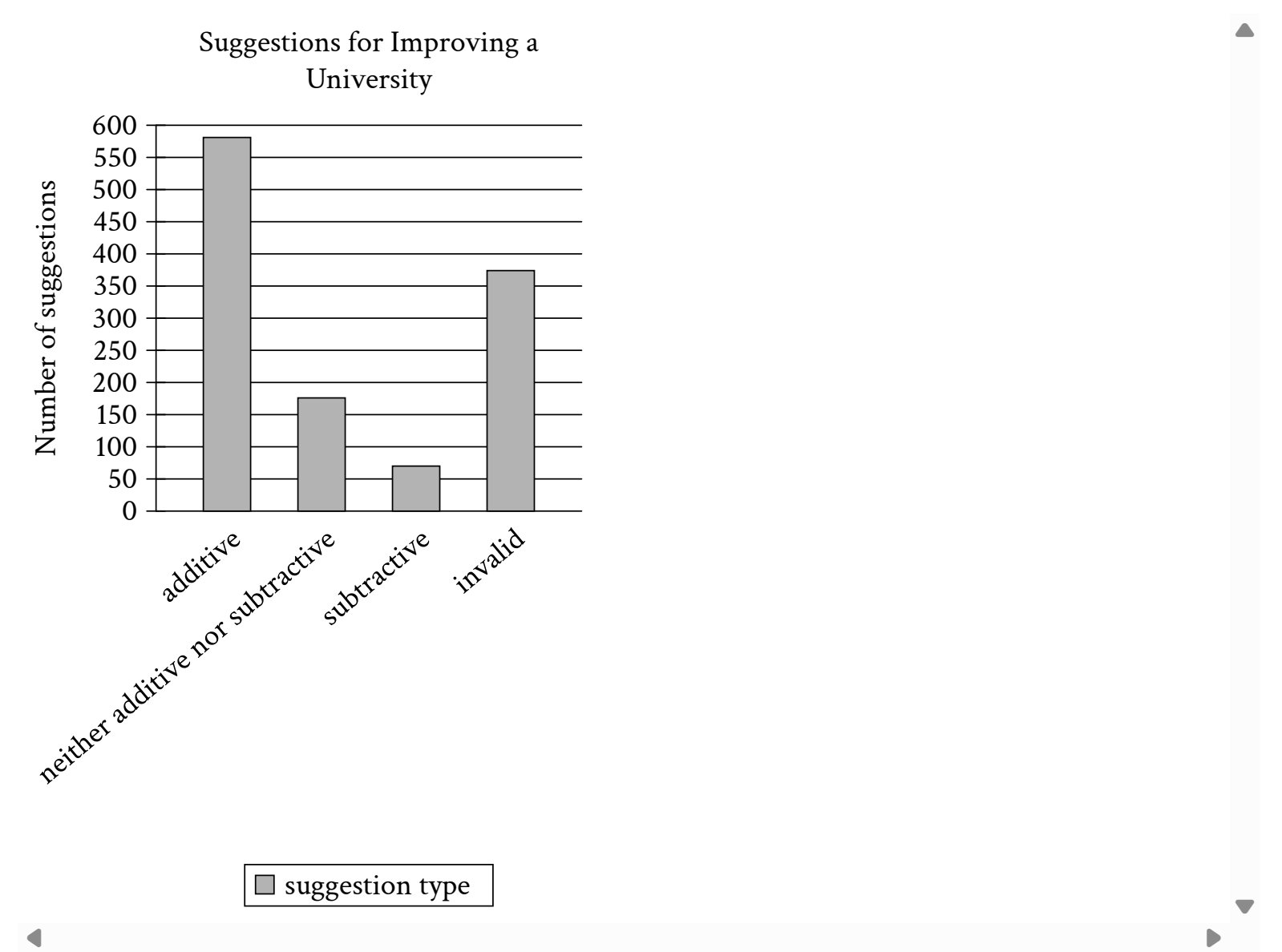
Which finding from the study, if true, would most directly support the researchers’ conclusion?

- A. Novels published after the year 1800 include the clock phrase 10 a.m. less often than novels published before the year 1800 do.
- B. Novels published after 1880 contain significantly more references to activities occurring after 10 p.m. than do novels from earlier periods.
- C. Among novels published in the nineteenth century, implied time references become steadily more common than clock phrases as publication dates approach 1900.
- D. The time references of noon (12 p.m.) and midnight (12 a.m.) are used with roughly the same frequency in the novels.

Question ID 463bc8a0

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 463bc8a0



Gabrielle Adams and colleagues reviewed suggestions for improving a university that had been submitted to the university’s president. They coded each suggestion as additive (the idea suggested adding something new to the university), subtractive (the idea suggested removing something from the university), neither additive nor subtractive, or invalid (the idea was not comprehensible). The data illustrated people’s tendency to overlook the possibility of removing things to achieve improvements:

Which choice most effectively uses data in the graph to complete the statement?

A. around 175 suggestions were coded as neither additive nor subtractive, whereas around 575 suggestions were coded as additive.

- B. more than 350 suggestions were coded as invalid, whereas fewer than 100 suggestions were coded as subtractive.
- C. fewer than 100 suggestions were coded as subtractive, whereas more than 550 suggestions were coded as additive.
- D. around 575 suggestions were coded as additive, whereas around 175 suggestions were coded as subtractive.

Question ID 7e3c3b1f

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 7e3c3b1f

In the early 1970s, art historian Michael Baxandall created an approach to viewing art called the “period eye,” which explains how to look at art through the lens of its historical period. Baxandall argued that it is critical that art historians understand and communicate the original social and cultural contexts of older works of art so that it is clear what the artists intended and how the pieces would have been understood by their original viewers. Since it was first introduced, Baxandall’s period eye has significantly influenced the practice of art history.

Which statement, if true, would most strongly support the claim in the underlined sentence?

- A. Art historians working today have largely rejected the idea, common among Baxandall’s predecessors, that artists’ intentions should influence how artworks are interpreted.
- B. For some historical periods, it is difficult for art historians to reconstruct how the original viewers of artworks understood what artists’ intentions for their works were.
- C. Numerous art historians of the late twentieth century and twenty-first century have focused their scholarship on how various artworks were interpreted at the time of their creation.
- D. Many art historians working before the 1970s produced detailed analyses of the social and cultural contexts of older artworks, though few extended that approach to artworks produced in their own lifetimes.

Question ID 20dab6a6

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 20dab6a6

In the 1980s, many musicians and journalists in the English-speaking world began to draw attention to music from around the globe—such as mbaqanga from South Africa and quan họ from Vietnam—that can’t be easily categorized according to British or North American popular music genres, typically referring to such music as “world music.” While some scholars have welcomed this development for bringing diverse musical forms to prominence in countries where they’d previously been overlooked, musicologist Su Zheng claims that the concept of world music homogenizes highly distinct traditions by reducing them all to a single category.

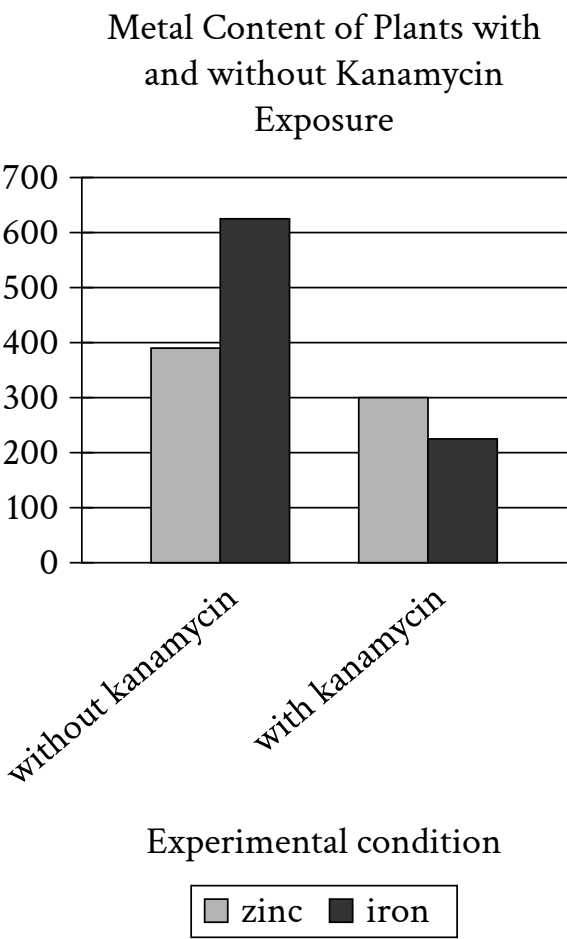
Which finding about mbaqanga and quan họ, if true, would most directly support Zheng’s claim?

- A. Mbaqanga and quan họ developed independently of each other and have little in common musically.
- B. Mbaqanga is significantly more popular in the English-speaking world than quan họ is.
- C. Mbaqanga and quan họ are now performed by a diverse array of musicians with no direct connections to South Africa or Vietnam.
- D. Mbaqanga and quan họ are highly distinct from British and North American popular music genres but similar to each other.

Question ID b0d0ffa8

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: b0d0ffa8



Many plants lose their leaf color when exposed to kanamycin, an antibiotic produced by some soil microorganisms. Spelman College biologist Mentewab Ayalew and her colleagues hypothesized that plants’ response to kanamycin exposure involves altering their uptake of metals, such as iron and zinc. The researchers grew two groups of seedlings of the plant *Arabidopsis thaliana*, half of which were exposed to kanamycin and half of which were a control group without exposure to kanamycin, and measured the plants’ metal content five days after germination.

Which choice best describes data in the graph that support Ayalew and her colleagues’ hypothesis?

- A. The control plants contained higher levels of zinc than iron, but plants exposed to kanamycin contained higher levels of iron than zinc.
- B. Both groups of plants contained more than 200 parts per million of both iron and zinc.
- C. Zinc levels were around 300 parts per million in the control plants but nearly 400 parts per million in the plants exposed to kanamycin.

D. The plants exposed to kanamycin showed lower levels of iron and zinc than the control plants did.

Question ID e31fda4b

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: e31fda4b

Simulated Change in Annual Aquifer Input and Irrigation Output if Precipitation Concentration Increases as Climate Models Predict

Baseline concentration of annual precipitation	% change in water entering aquifers	% change in surface water used for irrigation	% change in groundwater used for irrigation
Precipitation is currently somewhat concentrated	4.9	0.4	0.9
Precipitation is currently evenly distributed	11.0	9.0	7.9

Some climate models for the western United States predict that while total annual precipitation may remain unchanged from the present level, precipitation will become concentrated into fewer but more intense rain and snow events. University of Texas climate scientist Geeta Persad and her colleagues simulated how the amount of water entering aquifers and the amount being used for irrigation purposes would change if this were to occur. Persad and her colleagues concluded that concentration of precipitation into fewer events would result in a higher number of dry days, triggering more irrigation, but that this change in irrigation output is highly sensitive to the baseline concentration of precipitation that currently exists in an area.

Which choice best describes data from the table that support Persad and her colleagues’ conclusion?

- A. If baseline precipitation is somewhat concentrated, the amount of water being used for irrigation will increase 0.4% for surface water and 0.9% for groundwater, whereas the amount of water entering aquifers will increase 11.0% if baseline precipitation is evenly distributed.
- B. If baseline precipitation is somewhat concentrated, water use for irrigation will increase only slightly, whereas it will increase 9.0% for surface water and 7.9% for groundwater if baseline precipitation is evenly distributed.
- C. If baseline precipitation is somewhat concentrated, the amount of water entering aquifers will increase 4.9%, while the amount being used for irrigation will increase 0.4% for surface water and 0.9% for groundwater.
- D. If baseline precipitation is somewhat concentrated, water use for irrigation will decline by a small amount, whereas it will increase 11.0% for surface water and 9.0% for groundwater if baseline precipitation is evenly distributed.

Question ID 2f9b88ce

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 2f9b88ce

Jean-Bernard Caron and colleagues recently discovered a cache of jellyfish fossils in the Burgess Shale, a site in the Canadian Rockies that is rich in fossils from the Cambrian period (over 500 million years ago). Caron and colleagues claim that these are the oldest jellyfish fossils ever discovered. In the past twenty years, two sites in China and the United States have yielded fossils of a similar age that some experts believe are most likely jellyfish due to their shapes and the appearance of projecting tentacles. But Caron and colleagues argue that the apparent tentacles are in fact the comb rows of ctenophores, gelatinous animals that are only distantly related to jellyfish.

Which statement, if true, would most directly weaken the claim by Caron and colleagues about the fossils found in China and the United States?

- A. Sites in the Canadian Rockies from later periods than the Cambrian period have yielded fossils that have been conclusively identified as ctenophore fossils.
- B. The fossils found in China and the United States are so poorly preserved that though they cannot be conclusively identified as jellyfish, they cannot be conclusively identified as ctenophores either.
- C. While ctenophore fossils have been discovered in China and the United States, they have never been discovered in the Burgess Shale.
- D. The fossils discovered by Caron and colleagues in the Burgess Shale were better preserved than the fossils discovered by other researchers in China and the United States.

Question ID 7883425c

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 7883425c

In a research paper, a student criticizes some historians of modern African politics, claiming that they have evaluated Patrice Lumumba, the first prime minister of what is now the Democratic Republic of the Congo, primarily as a symbol rather than in terms of his actions.

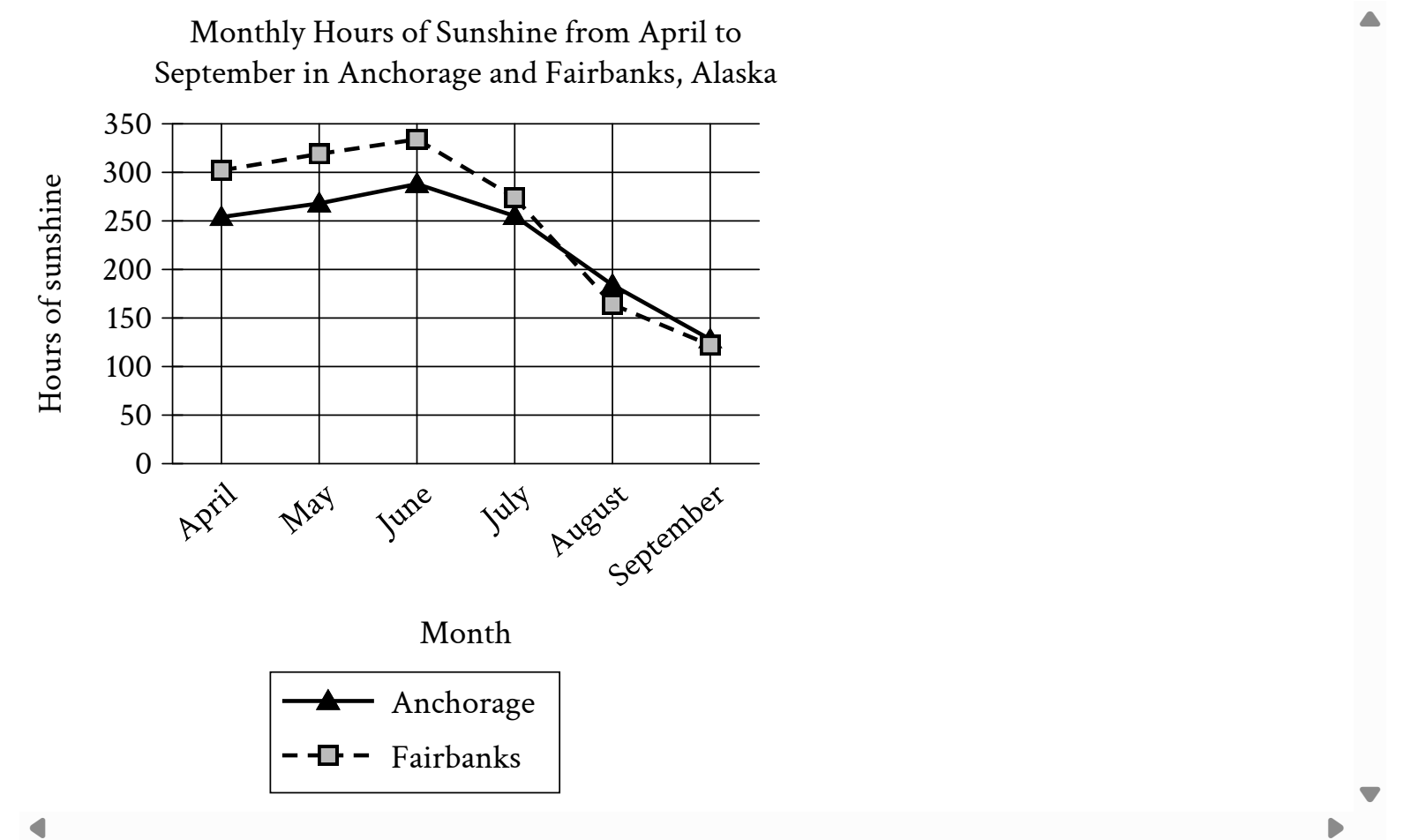
Which quotation from a work by a historian would best illustrate the student’s claim?

- A. “Lumumba is a difficult figure to evaluate due to the starkly conflicting opinions he inspired during his life and continues to inspire today.”
- B. “The available information makes it clear that Lumumba’s political beliefs and values were largely consistent throughout his career.”
- C. “Lumumba’s practical accomplishments can be passed over quickly; it is mainly as the personification of Congolese independence that he warrants scholarly attention.”
- D. “Many questions remain about Lumumba’s ultimate vision for an independent Congo; without new evidence coming to light, these questions are likely to remain unanswered.”

Question ID d1116bb7

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: d1116bb7



A student is researching monthly hours of sunshine in different cities in Alaska. When comparing trends in Anchorage and Fairbanks, the student concludes that the two cities show a similar pattern in the monthly hours of sunshine from April to September.

- Which choice best describes data from the graph that support the student’s conclusion?
- A. The monthly hours of sunshine in both Anchorage and Fairbanks hold steady in June and July before beginning to decline in August.
 - B. The monthly hours of sunshine in both Anchorage and Fairbanks increase from April to June and then decrease from June to September.
 - C. Anchorage and Fairbanks both have less than 200 monthly hours of sunshine from April to September.
 - D. Anchorage and Fairbanks both have more than 300 monthly hours of sunshine from April to June and less than 200 hours from July to September.

Question ID 221697ef

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 221697ef

The Milky Way galaxy is composed of millions of stars in a relatively flat structure containing a thin disk and a thick disk. Based on computer simulations and analysis of data on the brightness, position, and chemical composition of about 250,000 stars in the thick disk (collected from two telescopes, one in China and one orbiting in space), astrophysicists Maosheng Xiang and Hans-Walter Rix claim that the thick disk of the Milky Way formed in two distinct phases rather than a single one.

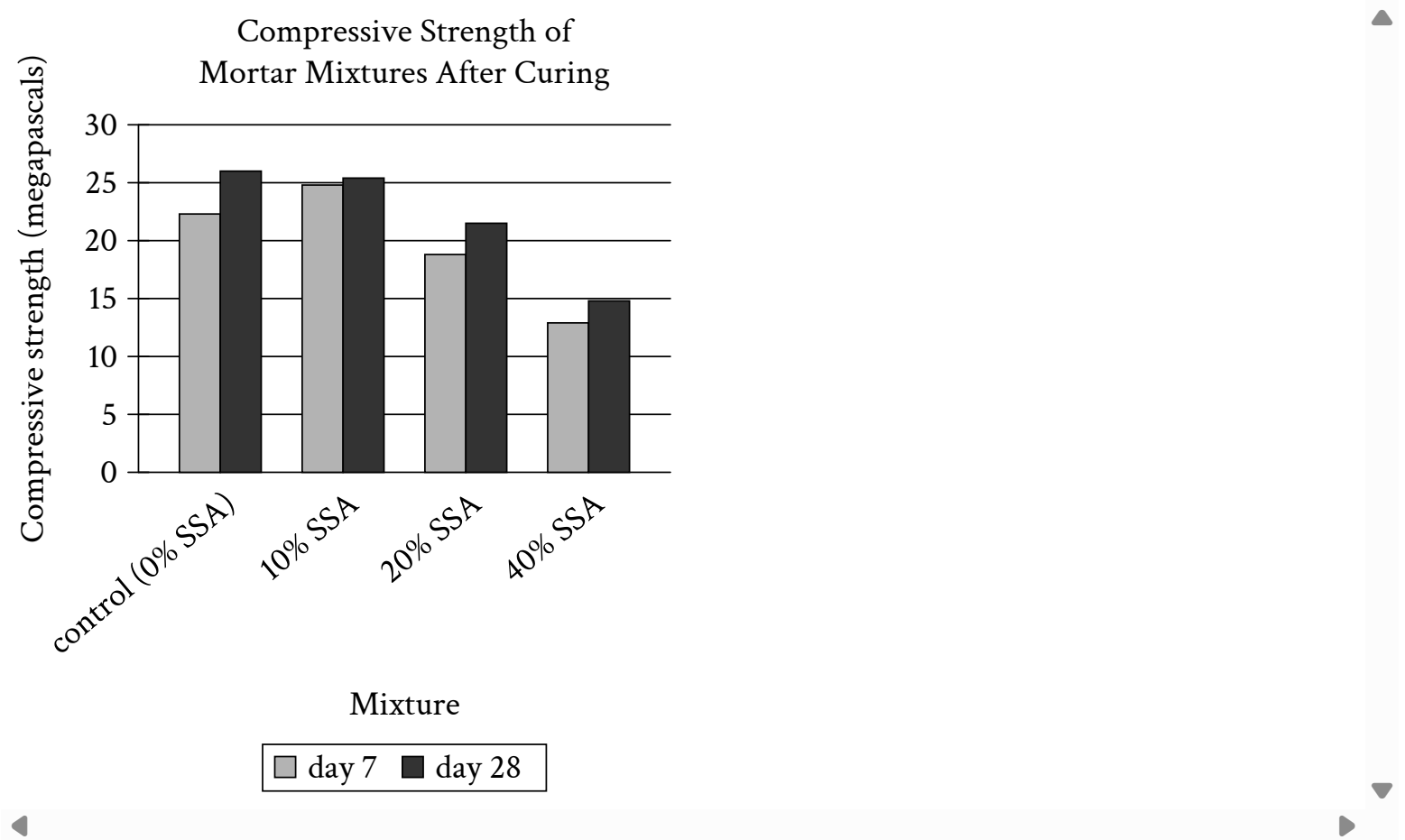
Which finding, if true, would most directly support the researchers’ claim?

- A. The telescopes used by the researchers have detected stars of similar ages in galaxies other than the Milky Way.
- B. There’s an age difference of about 2 billion years between certain stars in the thick disk.
- C. The thin disk contains about twice as many stars that can be seen from Earth as the thick disk does.
- D. The stars in the Milky Way tend to have very similar chemical compositions.

Question ID 26180e44

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 26180e44



Mollusk shells are mainly composed of calcium carbonate, a chemical compound used in mortar and other construction materials. A research team led by Ariane da Silva Cardoso investigated pulverizing discarded Sururu mussel shells to create a substitute for fine aggregates (such as sand) in mortar mixtures. The team prepared mixtures with Sururu shell aggregate (SSA) replacing varying percentages of sand and then tested the mortars' compressive strength on days 7 and 28 of curing. Based on their findings, the team recommended SSA substitution in relatively small proportions to avoid compromising strength.

- Which choice most effectively uses data from the graph to support the researchers' recommendation?
- A. The 10% SSA mixture's compressive strength was greater than or approximately equal to that of the control mixture on day 7 and on day 28, but on both days the 20% and 40% SSA mixtures had less compressive strength than the control mixture did.
 - B. The compressive strength of the 10% SSA mixture remained nearly the same from day 7 to day 28, while that of the 20% and 40% SSA mixtures changed substantially.
 - C. The 10% SSA mixture's compressive strength was greater than that of the control mixture on day 7, but by day 28 the 10% SSA mixture's compressive strength had decreased while that of the control mixture had increased.

D. The compressive strength of the 10% SSA mixture never surpassed the compressive strength measured for the control mixture on day 28.

Question ID 47b44139

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 47b44139

Annual Spending by International
Tourists in Four Countries (in billions
of US dollars)

Country	2016	2017	2018
South Korea	\$21.0	\$17.2	\$23.1
Japan	\$33.5	\$37.0	\$45.3
Thailand	\$48.5	\$57.1	\$61.4
Malaysia	\$19.7	\$20.3	\$21.8

One measure of international tourism is how much money visitors from abroad spend in a country. A student writing a report about tourism in several Asian countries notes that among the countries in the table, most had annual increases in international tourism revenue in 2017 and 2018, but that trend wasn't universal. For example, _____

Which choice most effectively uses data from the table to complete the example?

- A. in each year shown, the revenue from tourism by residents of those countries was greater than the revenue from international tourism.
- B. Japan's international tourism revenue was higher in 2016 than it was in 2018.
- C. South Korea's annual international tourism revenue decreased from 2016 to 2017.
- D. in each year shown, Thailand had higher international tourism income than any of the other countries.

Question ID b6f90541

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: b6f90541

Effects of Mycorrhizal Fungi on 3 Plant Species

Plant species	Mycorrhizal host	Average mass of plants grown in soil containing mycorrhizal fungi (in grams)	Average mass of plants grown in soil treated to kill fungi (in grams)
Corn	yes	15.1	3.8
Marigold	yes	10.2	2.4
Broccoli	no	7.5	7

Mycorrhizal fungi in soil benefits many plants, substantially increasing the mass of some. A student conducted an experiment to illustrate this effect. The student chose three plant species for the experiment, including two that are mycorrhizal hosts (species known to benefit from mycorrhizal fungi) and one nonmycorrhizal species (a species that doesn't benefit from and may even be harmed by mycorrhizal fungi). The student then grew several plants from each species both in soil containing mycorrhizal fungi and in soil that had been treated to kill mycorrhizal and other fungi. After several weeks, the student measured the plants' average mass and was surprised to discover that _____

Which choice most effectively uses data from the table to complete the statement?

- A. broccoli grown in soil containing mycorrhizal fungi had a slightly higher average mass than broccoli grown in soil that had been treated to kill fungi.
- B. corn grown in soil containing mycorrhizal fungi had a higher average mass than broccoli grown in soil containing mycorrhizal fungi.
- C. marigolds grown in soil containing mycorrhizal fungi had a much higher average mass than marigolds grown in soil that had been treated to kill fungi.
- D. corn had the highest average mass of all three species grown in soil that had been treated to kill fungi, while marigolds had the lowest.

Question ID 6d814df5

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 6d814df5

“Lines Written in Early Spring” is a 1798 poem by William Wordsworth. In the poem, the speaker describes having contradictory feelings while experiencing the sights and sounds of a spring day: _____

Which quotation from “Lines Written in Early Spring” most effectively illustrates the claim?

- A. “Through primrose-tufts, in that sweet bower, / The periwinkle trail’d its wreathes; / And ’tis my faith that every flower / Enjoys the air it breathes.”
- B. “The budding twigs spread out their fan, / To catch the breezy air; / And I must think, do all I can, / That there was pleasure there.”
- C. “The birds around me hopp’d and play’d: / Their thoughts I cannot measure, / But the least motion which they made, / It seem’d a thrill of pleasure.”
- D. “I heard a thousand blended notes, / While in a grove I [sat] reclined, / In that sweet mood when pleasant thoughts / Bring sad thoughts to the mind.”

Question ID 251677a1

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Reading and Writing	Information and Ideas	Command of Evidence	<div><div></div><div></div><div></div></div>

ID: 251677a1

Art collectives, like the United States- and Vietnam-based collective The Propeller Group or Cuba’s Los Carpinteros, are groups of artists who agree to work together: perhaps for stylistic reasons, or to advance certain shared political ideals, or to help mitigate the costs of supplies and studio space. Regardless of the reasons, art collectives usually involve some collaboration among the artists. Based on a recent series of interviews with various art collectives, an arts journalist claims that this can be difficult for artists who are often used to having sole control over their work.

Which quotation from the interviews best illustrates the journalist’s claim?

- A. “The first collective I joined included many amazingly talented artists, and we enjoyed each other’s company, but because we had a hard time sharing credit and responsibility for our work, the collective didn’t last.”
- B. “We work together, but that doesn’t mean that individual projects are equally the work of all of us. Many of our projects are primarily the responsibility of whoever originally proposed the work to the group.”
- C. “Having worked as a member of a collective for several years, it’s sometimes hard to recall what it was like to work alone without the collective’s support. But that support encourages my individual expression rather than limits it.”
- D. “Sometimes an artist from outside the collective will choose to collaborate with us on a project, but all of those projects fit within the larger themes of the work the collective does on its own.”