

#1

ID: 22e4d633

Although many transposons, DNA sequences that move within an organism's genome through shuffling or duplication, have become corrupted and inactive over time, those from the long interspersed nuclear elements (LINE) family appear to remain active in the genomes of some species. In humans, they are functionally important within the hippocampus, a brain structure that supports complex cognitive processes. When the results of molecular analysis of two species of octopus—an animal known for its intelligence—were announced in 2022, the confirmation of a LINE transposon in *Octopus vulgaris* and *Octopus bimaculoides* genomes prompted researchers to hypothesize that that transposon family is tied to a species' capacity for advanced cognition.

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

- A) The LINE transposon in *O. vulgaris* and *O. bimaculoides* genomes is active in an octopus brain structure that functions similarly to the human hippocampus.
- B) The human genome contains multiple transposons from the LINE family that are all primarily active in the hippocampus.
- C) A consistent number of copies of LINE transposons is present across the genomes of most octopus species, with few known corruptions.
- D) *O. vulgaris* and *O. bimaculoides* have smaller brains than humans do relative to body size, but their genomes contain sequences from a wider variety of transposon families.

#2

ID: 29f5c8c2

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.

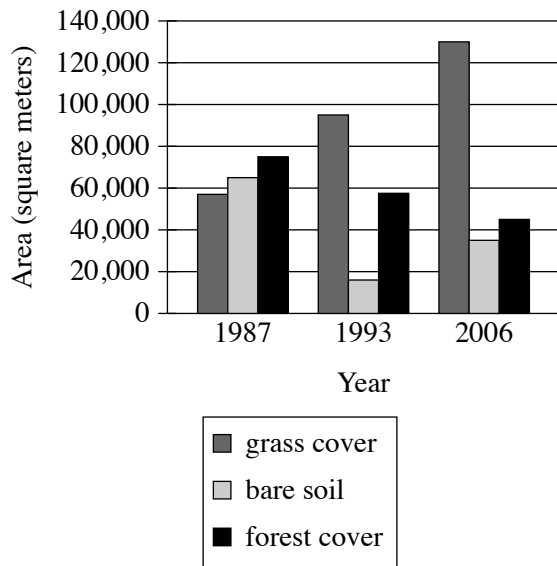
Which quotation from a researcher would best support the student's assertion?

- 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."

#3

ID: d83c3d54

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.

#4

ID: 95388117

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* .

#5

ID: 60c6b64d

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.

#6

ID: 1f3be847

"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."

#7

ID: 7cbb9764

Accomplished printmaker and sculptor Elizabeth Catlett (1915–2012) used her art to explore the Black experience in the United States. In a paper for an art history class, a student claims that Catlett had a particular talent for unifying various artistic traditions and styles in her work.

Which quotation from a scholar describing Catlett’s work would best support the student’s claim?

- A) “In *Mother and Child* , a sculpture of two Black figures, Catlett used an ancient Indigenous sculpting technique and combined the visual aesthetic of modern Mexican muralists with that of German artist Kathe Kollwitz.”
- B) “In her collage *New Generation* , Catlett overlaid fabric onto the canvas to represent the clothing of a father and his toddler, positioned to evoke classic images of a mother and child.”
- C) “Created in 1968, Catlett’s sculpture *Black Unity* , a stylized fist sculpted from mahogany and measuring two feet across, remains an important piece and has received renewed and well-deserved attention in recent years.”
- D) “One series of Catlett’s prints, made by the artist using the linoleum cut method, depicts several notable African American women, including Harriet Tubman and Sojourner Truth.”

#8

ID: 94ca8ebd

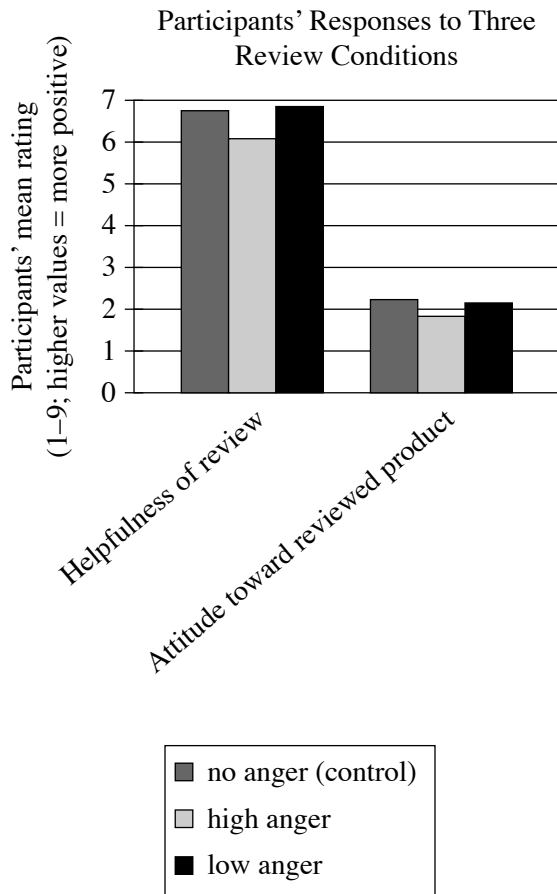
A student is examining a long, challenging poem that was initially published in a quarterly journal without explanatory notes, then later republished in a stand-alone volume containing only that poem and accompanying explanatory notes written by the poet. The student asserts that the explanatory notes 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.

#9

ID: d5b9ed0d



To understand how expressions of anger in reviews of products affect readers of those reviews, business scholar Dezhi Yin and colleagues measured study participants' responses to three versions of the same negative review—a control review expressing no anger, a review expressing a high degree of anger, and a review expressing a low degree of anger. Reviewing the data, a student concludes that the mere presence of anger in a review may not negatively affect readers' perceptions of the review, but a high degree of anger in a review does worsen readers' perceptions of the review.

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

- A) On average, participants' ratings of the helpfulness of the review were substantially higher than were participants' ratings of the reviewed product regardless of which type of review participants had seen.
- B) Compared with participants who saw the control review, participants who saw the low-anger review rated the review as slightly more helpful, whereas participants who saw the high-anger review rated the review as less helpful.
- C) Participants who saw the low-anger review rated the review as slightly more helpful than participants who saw the control review did, but participants' attitude toward the reviewed product was slightly worse when participants saw the low-anger review than when they saw the no-anger review.
- D) Compared with participants who saw the low-anger review, participants who saw the high-anger review rated the review as less helpful and had a less positive attitude toward the reviewed product.

#10

ID: a13541c0

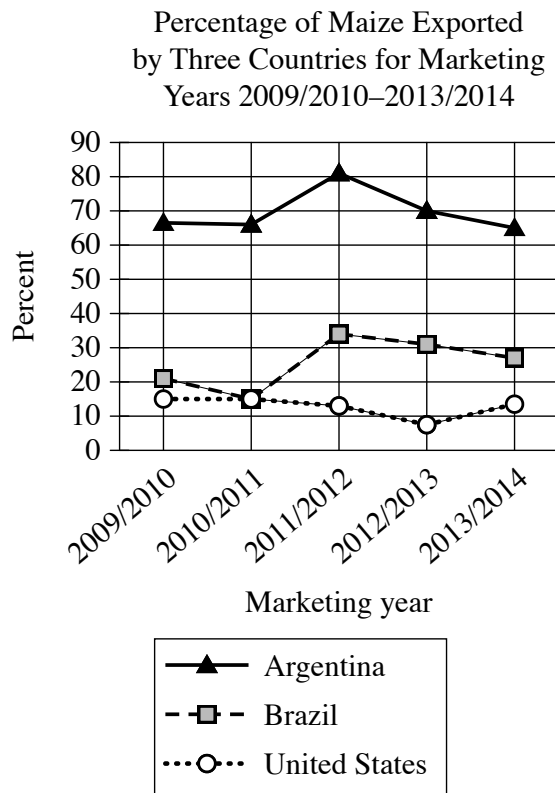
Sandra Cisneros's 1984 novella *The House on Mango Street* made a lasting impact on US literature. Its depiction of Mexican American culture inspired later authors to examine their own heritage within their fictional works. Also influential was the book's portrayal of the main character, Esperanza, during 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* .

#11

ID: 15873d14



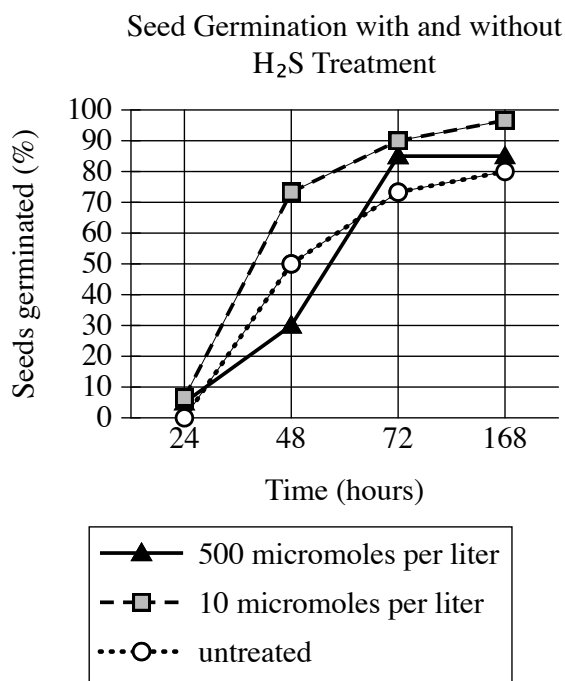
Argentina, Brazil, and the United States are among the world's leading producers of maize (corn), and each country exports a certain percentage of maize each marketing year, which runs from March to February in Argentina and Brazil and from September to August in the United States. A student is researching 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.

#12

ID: 8a584241



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.

#13

ID: dd72993d

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.

#14

ID: 25176ff8

“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 beautiful town of San José. There we will 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.”

#15

ID: 67b59a67

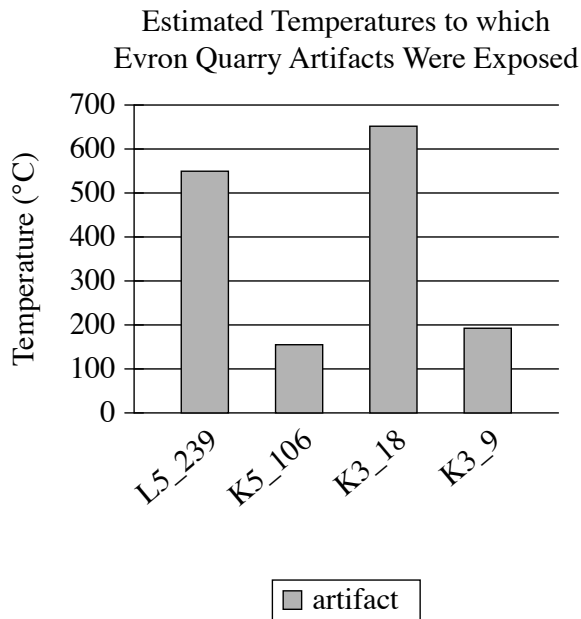
Plants like potatoes, tomatoes, and soybeans are susceptible to bacterial wilt disease caused by the bacteria *Ralstonia solanacearum*. A multinational team of scientists led by Zhong Wei studied whether other microbes in the soil might influence the degree to which plants are affected by the disease. 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.

#16

ID: 7edfb2c5



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.

#17

ID: 0c622cfb

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.

#18

ID: 5fb6ed10

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."

#19

ID: 57303718

“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.”

#20

ID: c538954d

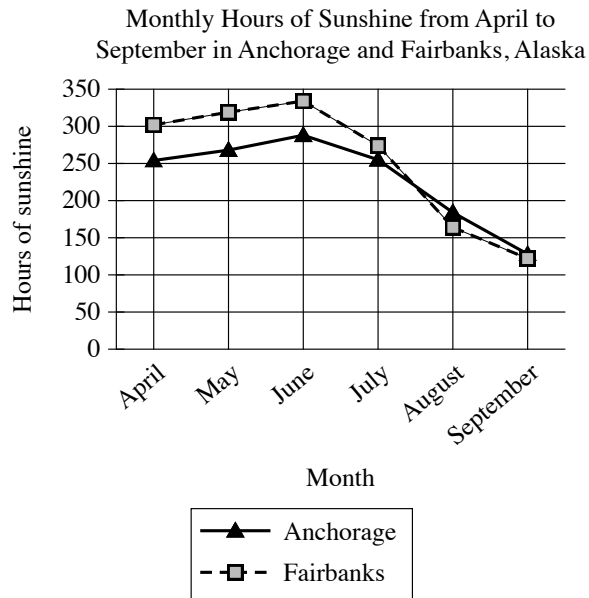
Sense and Sensibility is an 1811 novel by Jane Austen. In the novel, Austen describes Marianne Dashwood's ability to persuade others of the rightness of her artistic judgments, as is evident when Marianne visits with John Willoughby, a potential suitor: _____

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."

#21

ID: 8a668840



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.

#22

ID: 29cde5fa

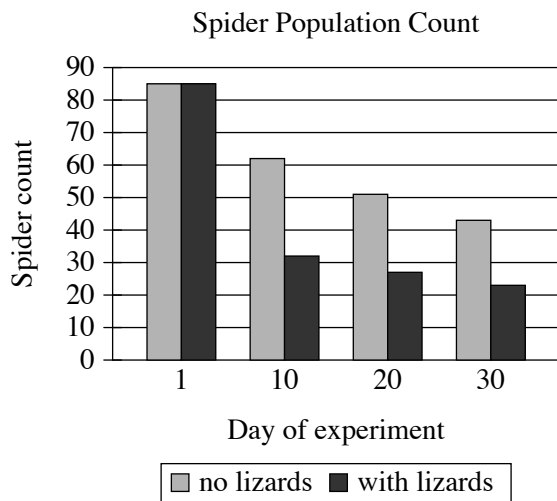
“Mr. Cornelius Johnson, Office-Seeker” is a 1900 short story by Paul Laurence Dunbar. In the story, the narrator describes Mr. Cornelius Johnson’s appearance as conveying his exaggerated sense of his importance: _____

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.”

#23

ID: b30a2613



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.

#24

ID: a95075c5

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

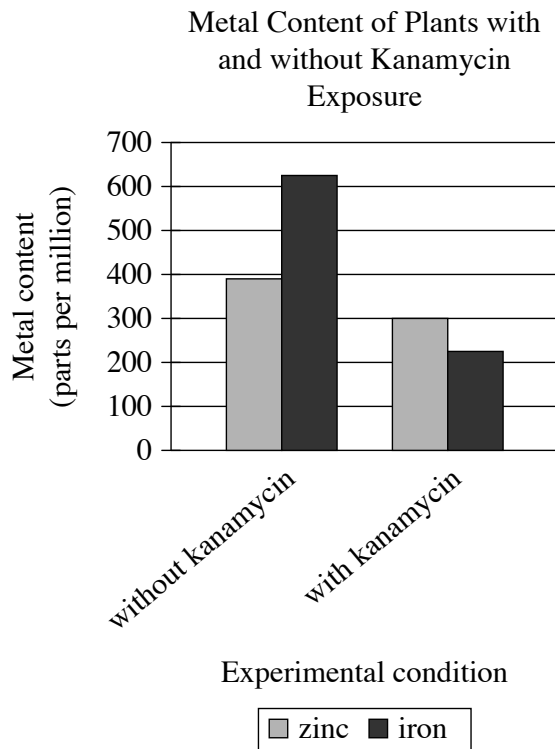
To test whether a medication is effective, scientists compare outcomes for patients taking it and patients taking a placebo (a medically inactive substance). Patients normally aren't told they're receiving a placebo, but a research team conducted a study to see if there might be a medical benefit to 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.

#25

ID: 742fd8ba



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.

#26

ID: 03e5cf33

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.

#27

ID: ed586475

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."

#28

ID: 81af81d4

“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.”

#29

ID: 8af0c099

“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.

#30

ID: e1546fd6

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.

#31

ID: f2b3b53b

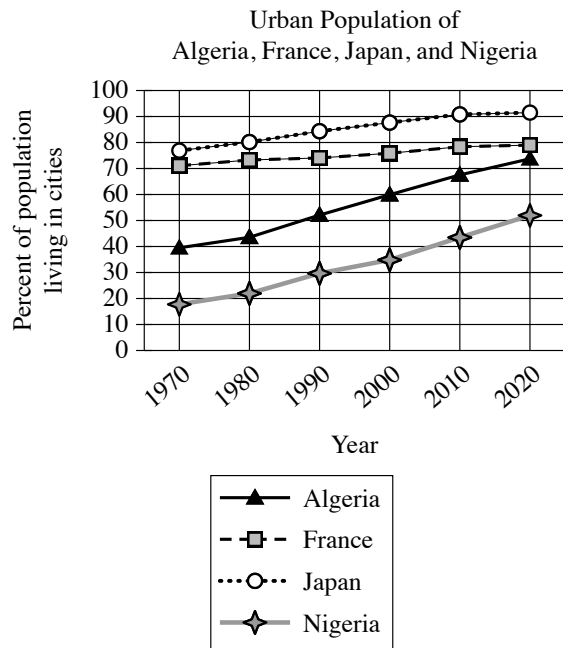
External shopping cues are a type of marketing that uses obvious messaging—a display featuring a new product, for example, or a “buy one, get one free” offer—to entice consumers to make spontaneous purchases. In a study, data scientist Sam K. Hui and colleagues found that this effect can also be achieved 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.”

#32

ID: a2b0fc3b



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.

#33

ID: 2584bcfb

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.

#34

ID: 25290c8d

“On Virtue” is a 1766 poem by Phillis Wheatley. Wheatley addresses the poem directly to the quality of virtue, imploring it to assist her in reaching a future goal: _____

Which quotation from “On Virtue” most effectively illustrates the claim?

- A) “Attend me, *Virtue*, thro’ my youthful years! / O leave me not to the false joys of time! / But guide my steps to endless life and bliss.”
- B) “I cease to wonder, and no more attempt / Thine height t’explore, or fathom thy profound.”
- C) “O thou bright jewel in my aim I strive / To comprehend thee. Thine own words declare / Wisdom is higher than a fool can reach.”
- D) “But, O my soul, sink not into despair, / *Virtue* is near thee, and with gentle hand / Would now embrace thee, hovers o’er thine head.”

#35

ID: 9e5ce27c

“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.”

#36

ID: cbecb873

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.

#37

ID: 99fdf71c

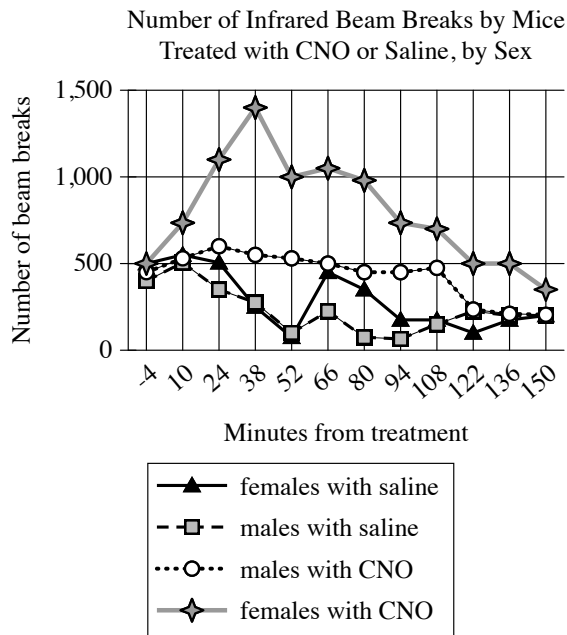
“When Dawn Comes to the City” is a 1922 poem by Claude McKay, who immigrated to the United States from the island nation of Jamaica as an adult. The poem conveys McKay’s contrasting feelings about New York City—his adopted home in the US—and his home country: _____

Which quotation from “When Dawn Comes to the City” most effectively illustrates the claim?

- A) “A lonely newsboy hurries by, / Humming a recent ditty; / Red streaks strike through the gray of the sky, / The dawn comes to the city [New York City].”
- B) “Dark figures start for work; / I watch them sadly shuffle on, / ’Tis dawn, dawn in New York. / But I would be on the island of the sea, / In the heart of the island of the sea.”
- C) “And the shaggy Nannie goat is calling, calling, calling / From her little trampled corner of the long wide lea / That stretches to the waters of the hill-stream falling / Sheer upon the flat rocks joyously!”
- D) “The tired cars go grumbling by, / The moaning, groaning cars, / And the old milk carts go rumbling by / Under the same dull stars.”

#38

ID: e2829dd7



To investigate the influence of certain estrogen-responsive neurons on energy expenditure, biologist Stephanie Correa et al. treated female and male mice with either saline solution or clozapine-N4-oxide (CNO), which activates the neurons. Monitoring the activity levels of the mice by measuring how frequently the animals broke infrared beams crossing their enclosures, Correa et al. found that the mice in their study showed sex-specific differences in response to neuron activation: _____

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

- A) the four groups of mice differed greatly in their activity levels before treatment but showed identical activity levels at the end of the monitoring period.
- B) saline-treated females showed substantially more activity at certain points in the monitoring period than saline-treated males did.
- C) CNO-treated females showed more activity relative to saline-treated females than CNO-treated males showed relative to saline-treated males.
- D) CNO-treated females showed a substantial increase and then decline in activity over the monitoring period, whereas CNO-treated males showed a substantial decline in activity followed by a steep increase.

#39

ID: 194dd448

“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.”

#40

ID: c6b470bb

“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.”

#41

ID: cc414c9

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.

#42

ID: a0203977

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.

#43

ID: 0ec15b5a

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.

#44

ID: a9390104

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.

#45

ID: 39de2206

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.”

#46

ID: cf7491c1

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.

#47

ID: 5d6ab069

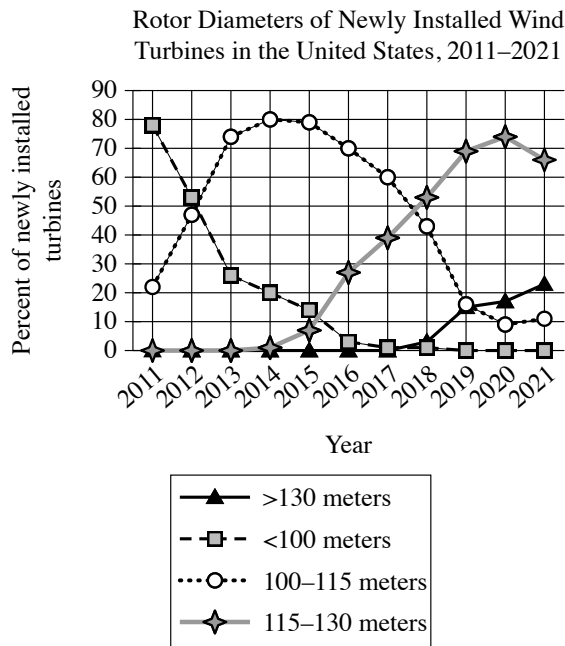
Jan Gimsa, Robert Sleight, and Ulrike Gimsa have hypothesized that the sail-like structure running down the back of the dinosaur *Spinosaurus aegyptiacus* improved the animal's success in underwater pursuits of prey species capable of making quick, evasive movements. To evaluate their hypothesis, a second 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.

#48

ID: 2df730d0



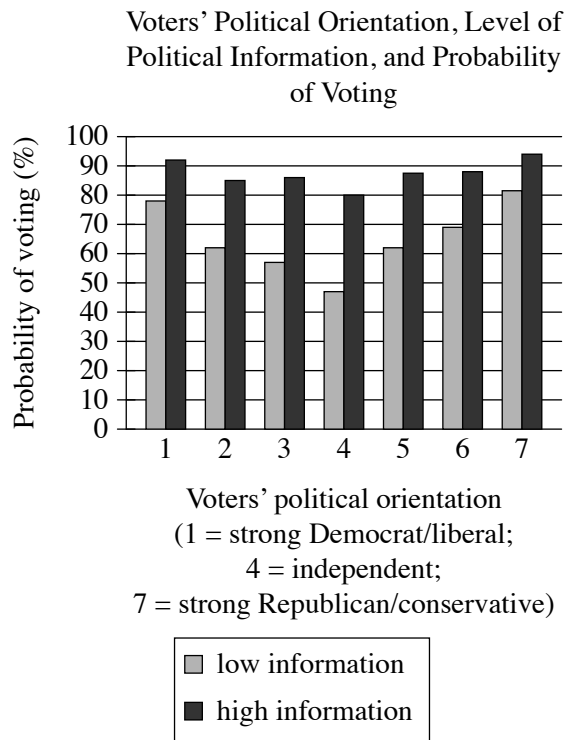
All other things being equal, the larger a wind turbine's rotor diameter (the diameter of the imaginary circle swept by the turbine's rotating blades), the greater amount of energy the turbine can generate. In a research paper on wind power, a student claims that in the United States, the amount of energy 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) The percentage of newly installed turbines with rotor diameters greater than 130 meters increased every year between 2011 and 2021.
- B) 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.
- C) 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.
- D) 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.

#49

ID: 5d453dcc



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.

#50

ID: 2ef8e367

"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."

#51

ID: cebfb2c6

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.

#52

ID: 1d08c7ee

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.”

#53

ID: dd349efc

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.

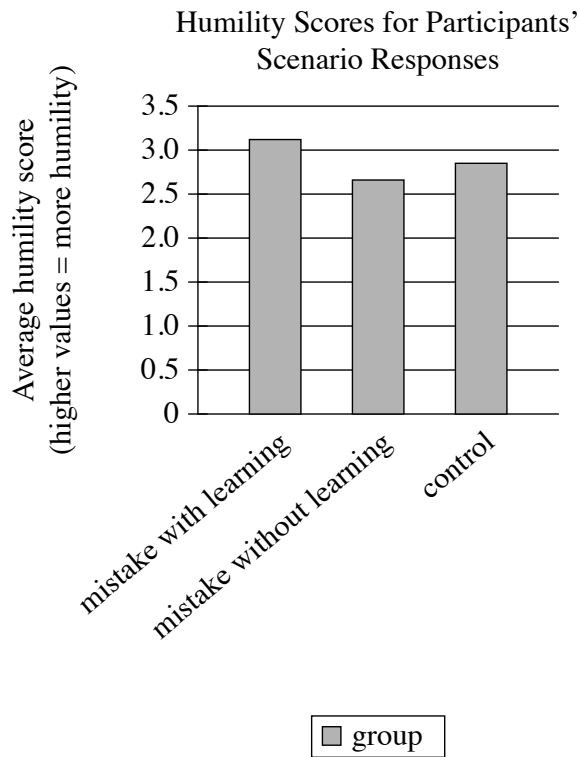
Georgia Tech roboticists De'Aira Bryant and Ayanna Howard, along with ethicist Jason Borenstein, were interested in people's perceptions of robots' competence. They recruited participants and asked them how likely they think it is that a robot could do the work required in various occupations. Participants' 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.

#54

ID: e99a38ec



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.

#55

ID: d5d3ea31

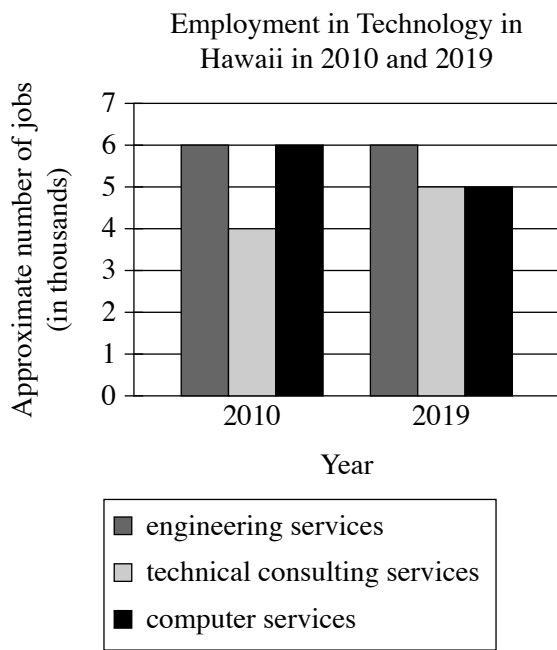
“The Yellow Wallpaper” is an 1892 short story by Charlotte Perkins Gilman. In the story, the narrator expresses mixed feelings about her surroundings: _____

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.”

#56

ID: b074cc05



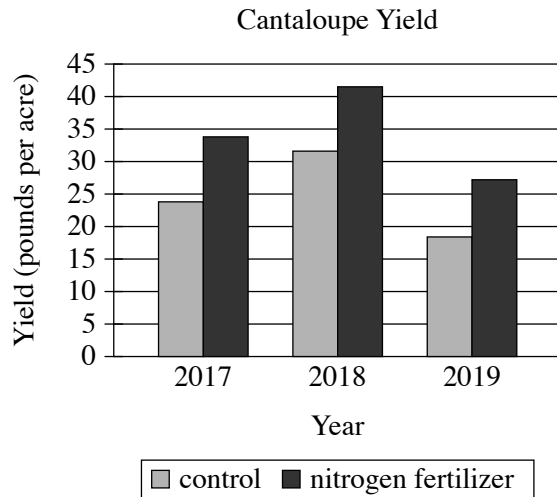
A student in Hawaii is interested in pursuing a career in technology and decides to do some research on local trends. The student notices that the number of jobs in computer services in 2010 was _____

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.

#57

ID: 1db1a9a6



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.

#58

ID: 16a4a83b

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.”

#59

ID: 9aa5efc4

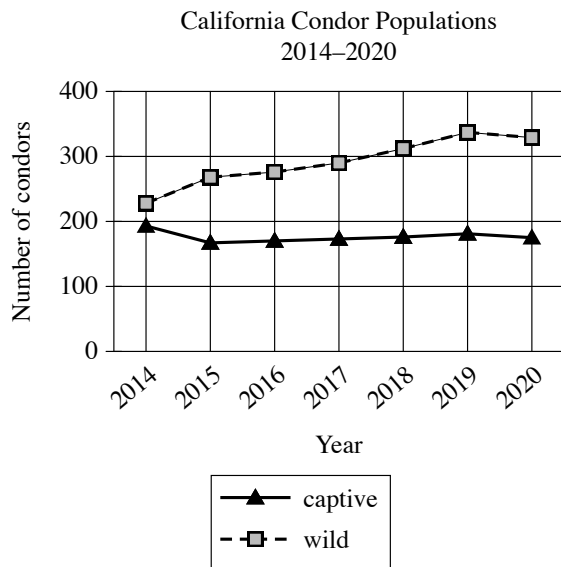
Born in 1891 to a Quechua-speaking family in the Andes Mountains of Peru, Martín Chambi is today considered to be one of the most renowned figures of Latin American photography. In a paper for an art history class, a student claims that Chambi’s photographs have considerable ethnographic value—in his 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.

#60

ID: 224428ac



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.

#61

ID: d76ea360

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.

#62

ID: 84136d69

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.

#63

ID: dc47c2ac

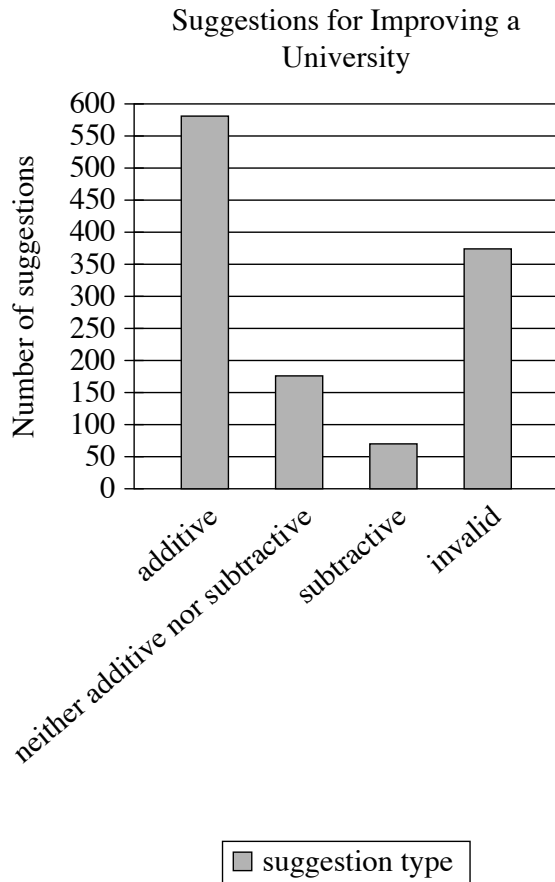
Although most songbirds build open, cupped nests, some species build domed nests with roofs that provide much more protection. Many ecologists have assumed that domed nests would provide protection from weather conditions and thus would allow species that build them to have larger geographic ranges than 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.

#64

ID: 23e2421a



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.

#65

ID: df8caadd

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.

#66

ID: 94978129

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.

#67

ID: b4cda84d

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.”

#68

ID: fbb84fb0

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!"

#69

ID: 73d457b6

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.

#70

ID: 87023f34

“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.”

#71

ID: 6317295c

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.