

The **ACT** Big Book of Questions

English, Math, Reading, and Science

SAMPLE

Focusing on the Individual Student



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Section Quizzes

The purpose of this book’s Section Quizzes is to identify the specific areas (question types) you need to work on to improve your scores.

Section Quizzes are groups of question types within the ACT’s categories for the Math and English Tests. These categories are represented by subscores on official ACT score reports.

ACT Test	Category	Sample Question Types
English	Conventions of Standard English	Pronouns, Fragments, Commas
	Production of Writing	Organization, Transitions
	Knowledge of Language	Style, Wordiness
Math	Integrating Essential Skills	Fractions, Proportions, Percents
	Number & Quantity	Imaginary Numbers, Matrices, Vectors
	Algebra	Exponents, Equations, Quadratics
	Geometry	Triangles, Conic Sections
	Functions	Trigonometry Identities, Logarithms
	Statistics & Probability	Averages, Probability

Reading passages in this book are divided based on two categories of question types, as defined by the ACT: Key Ideas & Details and Craft & Structure.

Science passages in this book are divided based on passage types, as defined by the ACT: Data Representation, Research Summary, and Conflicting Viewpoints.

Assessment

Use the Section Quizzes to assess your proficiency with specific question types. For example, the Algebra quiz has a few of each question type within that category. You can use this quiz to measure your proficiency with question types such as exponents, equations, and graphing lines. Based on your performance, you can determine which question types you should practice more. If you cannot solve most of the exponent questions in your Algebra Section Quiz, you should prioritize working through the later quiz that focuses exclusively on exponent questions.

Effective preparation for the ACT requires determining which question types you should practice. Official ACT score reports do not provide assessments for specific question types. Test scores give very broad assessments, and subscores give somewhat more useful assessments of content areas, but a more specific assessment is needed to customize your prep. This book’s Section Quizzes bridge the gap between official subscores and specific question types so you can focus on what you need most to reach your highest potential on the test.

Review & Reflect

Following each set of Section Quizzes or section of Question Type Quizzes is a page for you to review and reflect on your performance. Use these pages to take notes on your experience of working through the previous quizzes.

Being aware of your own thought processes and skills is an important step toward improvement.

Consider and note the following:

- With which questions did you feel **confident**?
- With which questions did you **struggle**?
- Were you **surprised** by any of the questions?
- Did you have to **guess** on any questions?
- Did any of the questions take you a **long time** to answer?
- Did you spot any **tricks** or “attractors” in the questions?
- Did you make any careless **mistakes** or misread any questions?
- Do you feel that there are **underlying skills** you need to learn or strengthen before you can confidently answer some of the questions?
- Any other notes?

SAMPLE

Conventions of Standard English 1

Galen's idea of the four humors impacted the field of medicine for over a millennium and a half. This concept spread across the globe. It impacted the Roman Empire, the medieval period, and the Renaissance. In the eighteenth century, the humors lose their standing as the foundation of the medical field, but they still influence a lot of folk medical practices around the world.

1. A. NO CHANGE
- B. lose there
- C. lost their
- D. lost there

Galen was an influential Greek physician in the second century CE. As a student of medicine in the ancient world, a lot of Galen's ideas were owed to his predecessor,

2. F. NO CHANGE
- G. Galen's lot of ideas were owed
- H. Galen owed a lot of his ideas
- J. owing a lot of Galen's ideas

Hippocrates, whom is given credit for introducing the theory of humors. Galen promoted this theory and expanded upon it.

3. A. NO CHANGE
- B. whom's
- C. who is
- D. whose

Galen's main interest was in human anatomy, however, his research was held back by Roman laws that didn't allow human dissection. Instead, Galen practiced dissection on dead and living animals to get a better understanding of anatomy. He defended his practices of venesection and bloodletting even though they were controversial in Rome. Galen's teachings and practices had a big impact for a long time after he died.

4. F. NO CHANGE
- G. anatomy, however;
- H. anatomy, however—
- J. anatomy; however,

While Galen contributed to the medical field in many ways, he is most associated with the idea of the four humors.

The theory of the humors was based⁵ on the foundation that there are four bodily fluids which must be kept in balance: blood, phlegm, yellow bile, and black bile. Blood was linked with agitation and dysentery, yellow bile with anger, black bile with depression, and phlegm with swelling and pneumonia. If any one of these humors was dominant in a person, theirs⁶ would result in symptoms of disease and would also explain parts of the individual's personality.

Finding a balance in the humors depended on each person's age and body, as well, as⁷ other factors such as the current season. Also, each humor was tied to heat, cold,

wetness, or dryness. Patients treatments'⁸ involved eating or

putting on certain ointments to get the proper numbers⁹ of warmth and moisture, as well as the correct balance of the four elements for each specific situation. Galen's influence can be found throughout the world. The Arabic word for health,

Misáj, find's its¹⁰ roots in the word that means "to mix" because of Galen's belief that any imbalance would result in sickness.

5. A. NO CHANGE
B. humors, was based
C. humors were based
D. humors, were based

6. F. NO CHANGE
G. they're
H. it's
J. it

7. A. NO CHANGE
B. body as well, as
C. body, as well as,
D. body, as well as

8. F. NO CHANGE
G. Patients treatment's
H. Patients' treatments
J. Patient's treatments

9. A. NO CHANGE
B. number
C. amount
D. amounting

10. F. NO CHANGE
G. find's it's
H. finds it's
J. finds its

Centuries later, Galen’s impact was clear in Elizabethan England. People managed their lives in an attempt to balance their humors. For example, because masculinity was tied to the dry and hot humors, Elizabethans believed bathing was more harmful to men then women. We can also see that Shakespeare, as well as Chaucer and several other famous

writers utilizes the idea of these humors for describing

characters, including physical appearance, motivations, and general behavior.

Until the seventeenth century, the medical field in the United Kingdom relied on a humors-based system called Constitutional Imbalance, which was the basis for the medicine practiced by the Royal College of Physicians. Until the nineteenth century, medicine in the United States used the same practices as the Royal College of Physicians. In some areas of Central America, there is still a saying: “An orange in the morning is medicine, in the middle of the day it makes you sick, in the evening it kills you.” This odd advice is based on the idea that oranges are “cold” foods and mornings are typically cold, it is believed that eating cold food at other times will cause shock to your body. While Galen’s theory doesn’t directly influence modern medicine and science, it still has some impact on medicine and culture worldwide.

11. A. NO CHANGE
 B. than women
 C. than to women
 D. then to women

12. F. NO CHANGE
 G. writers, utilizes
 H. writers utilize
 J. writers, utilize

13. A. NO CHANGE
 B. including, physical appearance, motivations and general behavior
 C. including physical appearance, motivations, and general behavior
 D. including physical appearance motivations and general behavior

14. F. NO CHANGE
 G. than the Royal College of Physicians
 H. as for the Royal College of Physicians
 J. as did the Royal College of Physicians

15. A. NO CHANGE
 B. cold, it is believed, that
 C. cold. It is believed that
 D. cold, it is believed. That

Standard English Conventions – Pronouns 3

Two hundred years after the Salem Witch Trials, New England farmers became convinced that their relatives were rising from their graves to feed on them. To stop this

1

supernatural threat, people dug up bodies and examined it for

2

evidence of vampiric activity. While these investigations began in the 1700s, most occurred in the late 1800s, in what became known as the Great New England Vampire Panic.

3

The fear of vampires almost always occurred in the midst of tuberculosis outbreaks. Tuberculosis, then known as consumption, was a disease it seemed to drain the life and blood from the victim. With no available treatment for the disease, and many communities already suffering from the Civil War, people were desperate for answers about what was happening to there friends and family. A frightening theory was spread throughout New England: vampires are roaming among the public, and its feeding on the flesh and blood of their still living loved ones.

4

5

6

1. A. NO CHANGE
B. those
C. it
D. the living citizens
2. F. NO CHANGE
G. them
H. that
J. their
3. A. NO CHANGE
B. these
C. they
D. this
4. F. NO CHANGE
G. who
H. they
J. that
5. A. NO CHANGE
B. they're
C. their
D. its
6. F. NO CHANGE
G. it's
H. their
J. they're

Each community dealt with their vampire threat
 7
 differently. In many cases, only family and neighbors of the
 suspected vampire got involved, but in others, town fathers,
 clergymen, and even doctors would assist in fighting the
 menace. In Maine and Massachusetts, bodies were simply
 flipped over. In places like Vermont and Rhode Island,
 however, they would often remove the corpse's heart and burn
 it. The infected person would breathe in the smoke and might
 even have been told to eat the ashes, which was believed to
 cure their condition and restore health.

8
 Word of these rituals spread. Local and foreign journalists
 commented on the phenomenon, wondering how people of
 modern times, some of whom lived fewer than twenty miles
 9
 away from the summer homes of the pioneers of the Industrial
 Revolution, could believe in vampires. Theories ranged from
 the locals playing a practical joke on the rest of the world to
themselves having addled minds due to inbreeding.

10

7. A. NO CHANGE
 B. they're
 C. its
 D. it's

8. F. NO CHANGE
 G. they're
 H. its
 J. his or her

9. A. NO CHANGE
 B. who
 C. their
 D. it

10. F. NO CHANGE
 G. theirselves
 H. them
 J. they're

From a modern perspective, removed from these events by over a hundred years, the cause of this behavior seems clearer. When one finds themselves in dire situations and has ¹¹

no guidance from rational authorities, one resorts to alternative ¹² explanations and solutions. The New Englanders of the late 1800s were far less religious than their ancestors and were not properly educated in modern medicine. The tuberculosis bacterium was discovered in 1882 by a Prussian physician using a new staining method; unfortunately, it was some time before people they lived in rural areas heard about that ¹³ discovery. Without scientific understanding, people turned to folklore and superstition to help them handle hard situations they could not understand. Faced with a falling population and no effective way of combatting it, the people dug up the dead ¹⁴ and blamed problems on these deceased. The rituals offered evidence that the people in charge were doing everything they could to save it. Fortunately, only the dead were disturbed, and ¹⁵ in the 1940s, drug treatments for tuberculosis became available.

11. A. NO CHANGE
 B. themselves
 C. oneself
 D. them

12. F. NO CHANGE
 G. one resort
 H. you resort
 J. your resorts

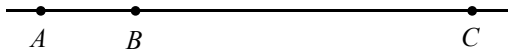
13. A. NO CHANGE
 B. that
 C. whom
 D. who

14. F. NO CHANGE
 G. them
 H. one
 J. that situation

15. A. NO CHANGE
 B. them
 C. one
 D. their peers

Section Quiz

1. A line contains the points A , B , and C , in the order shown in the figure below. The ratio of the length of \overline{AB} to the length of \overline{BC} is 3:13. If it can be determined, what is the ratio of the length of \overline{BC} to the length of \overline{AC} ?



- A. 13:16
 B. 13:10
 C. 13:3
 D. 16:13
 E. Cannot be determined from the given information
2. A triangle has two side lengths with lengths of 3 and 12. If the length of the third side is a , which of the following defines the set of all possible values of a ?
- F. $0 < a$
 G. $3 < a < 12$
 H. $6 < a < 15$
 J. $9 < a < 15$
 K. $12 < a < 15$
3. An Olympic-size pool is 50 meters in length. Approximately how long is an Olympic-sized pool in inches (1 foot \approx 0.3048 meters)?
- A. 14
 B. 50
 C. 164
 D. 1970
 E. 5910

4. What value of x satisfies the equation below?

$$5 = 7 + |2x - 4|$$

- F. 1
 G. 2
 H. 3
 J. 4
 K. There is no such value of x

5. Line segment \overline{AB} has slope 4. Line \overline{CD} is the perpendicular bisector of \overline{AB} . What is the slope of \overline{CD} ?

- A. 4
 B. 1
 C. $\frac{1}{4}$
 D. $-\frac{1}{4}$
 E. -4

6. A four-inch strand of hair grows at a rate of half an inch per month. Assuming the hair is never cut, how many inches long will the strand be in five years?

- F. 20
 G. 26
 H. 30
 J. 34
 K. 36

7. The following table shows the approximate historical budget, in millions of dollars, for six government areas of Massachusetts over four consecutive years.

Historical Budgets (\$ millions), 2015-2018

Government Area	2015	2016	2017	2018
Transportation	575	645	608	520
Public Safety	1,040	1,050	1,060	1,100
Education	6,700	6,780	6,950	7,100
Health & Human Services	18,950	20,280	21,025	21,690
Housing & Economic Development	475	480	506	524

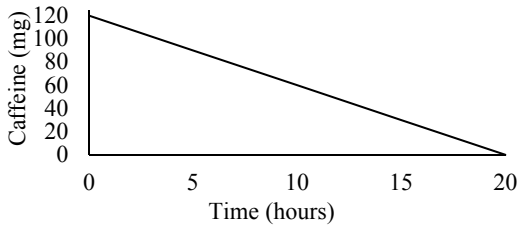
Of the following government areas and time periods, which represents the smallest percent change from 2015 to 2017?

- A. Transportation
 B. Education
 C. Housing & Economic Development
 D. Health & Human Services
 E. Public Safety

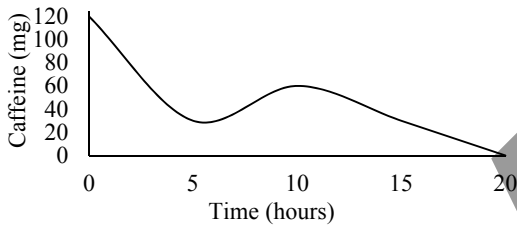
8. A movie theater sells medium and large bags of popcorn. The ratio of the number of medium bags to large bags sold on a particular day was 4:5. If the theater sold 100 medium bags of popcorn that day, how many large bags of popcorn did they sell that day?
- F. 80
 G. 100
 H. 125
 J. 225
 K. 250
9. Which of the following numbers is greatest in value?
- A. $\frac{29}{101}$
 B. $\frac{290}{1001}$
 C. $\frac{0.29}{1}$
 D. $\frac{0.29}{10}$
 E. $\frac{0.292}{1}$
10. A restaurant owner tracked the number of appetizers purchased each day over the course of two weeks. The number of appetizers purchased by customers each day is represented in the stem-and-leaf plot below.
- | Stem | Leaf |
|------|---------|
| 4 | 5 5 9 |
| 5 | 2 8 9 9 |
| 6 | 0 2 2 4 |
| 7 | 1 7 |
| 8 | 1 |
- Key: 3 | 2 = 32 appetizers
- What is the ratio of the number of days customers purchased less than 50 appetizers to the number of days that customers purchased more than 60 appetizers?
- F. 1:1
 G. 1:2
 H. 3:7
 J. 3:14
 K. 11:6
11. Joel is trying to determine his expenses if he purchases a new automobile. The last item on his list of expenses to figure out is the state excise tax. In Joel’s state, excise tax is assessed proportionally based on the vehicle’s “book value.” For every \$1,000 in book value of a vehicle, new or used, an excise tax of \$25 is assessed. Joel’s current vehicle has a book value of \$3,450. The vehicle Joel wants to purchase is valued at \$27,395. How much more excise tax will Joel have to pay if he goes ahead and purchases the new vehicle? Round to the nearest cent when choosing your answer.
- A. \$957.80
 B. \$684.88
 C. \$598.63
 D. \$273.95
 E. \$86.25
12. The power needed to run a toaster is 1200 joules per second. What is the approximate power required to run the toaster in foot-pounds per minute (1 foot-pound \approx 1.35582 joules)?
- F. 885
 G. 1,627
 H. 53,100
 J. 97,600
 K. 132,000
13. Daily rainfall in a particular city was tracked over the month of April, which has 30 days. The average rainfall for the entire month was 4.4 inches. If the average rainfall for the first ten days was 4.8 inches, which of the following must be true about the average rainfall during the last twenty days of the month?
- A. It must be less than 4.4 inches.
 B. It must be equal to 4.4 inches.
 C. It must be between 4.4 and 5.0 inches.
 D. It must be equal to 5.0 inches.
 E. It must be greater than 5.0 inches.

14. For the average human, the half-life of caffeine, the time it takes for the body to eliminate half of the amount of caffeine consumed, is approximately 5 hours. Alex just consumed 120 mg of caffeine in her morning coffee. Which of the following graphs best models the mass of the original 120g of caffeine still remaining in Alex’s system over the 20 hours immediately following her morning coffee?

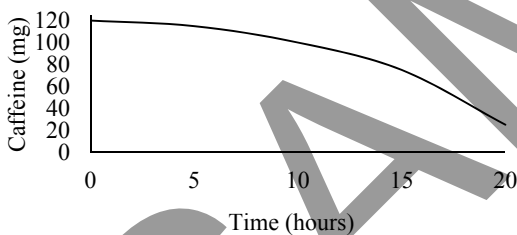
F.



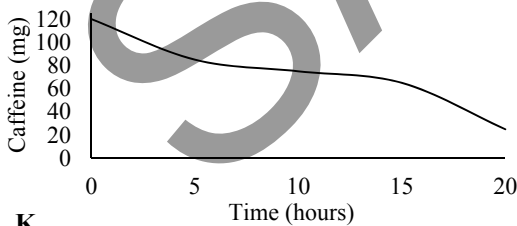
G.



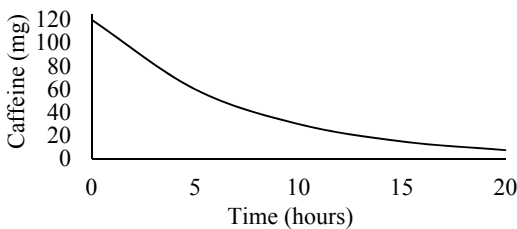
H.



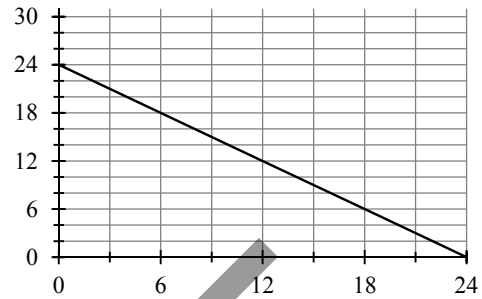
J.



K.



15. What is one possible scenario represented in the graph below?



- A. A food pantry is tracking their supply of food. They start with 24 storage containers, and the supply decreases by one container every two months.
- B. Beth took out a loan that will require 24 annual payments. She wants to track how many payments remain after each annual payment when she makes one.
- C. Jared figures it will take him two years to save up for a sailboat. He wants to track his progress as his savings grow.
- D. A homeowner must put a salt product in her water softening system to maintain a potable water source. She usually puts twenty-four pounds of the salt product into the system holding tank. The holding tank empties and needs to be refilled every month and a half.
- E. The half-life of a radioactive material is approximately 6 hours. Scientists track the amount of the original 24 grams of radioactive material remaining over 24 hours.

16. The price of a laptop is raised by 20% because of its popularity. This price increase causes a sharp decline in sales. Company executives decide to lower the sales price but only enough to still allow for a 15% increase over the original price. To the nearest whole number, by what percent should the price of the laptop be lowered to accomplish this?

- F. 4
- G. 5
- H. 12
- J. 15
- K. 20

Algebraic Equations & Inequalities

1. Li has \$20.00 to spend on public transportation today. A one-way bus ride costs \$1.75, and a one-way subway ride costs \$2.25. If he buys only three one-way bus tickets, what is the maximum number of one-way subway tickets he can purchase?
- A. 3
B. 6
C. 7
D. 9
E. 17
2. Which of the following describes the solution set to the equation $4x + 7 = 15 + 4x$?
- F. The equation has one solution, $x = 1$.
G. The equation has one solution, $x = 2$.
H. The equation has one solution, $x = 3$.
J. The equation has infinitely many solutions.
K. The equation has no solutions.
3. What is the least integer solution to the inequality $5x + 4.6 \geq 20.4$?
- A. 2
B. 3
C. 4
D. 5
E. 6
4. At the monthly swap meet, Jun sells necklaces that he makes at home. In order to make a necklace, he must purchase basic materials, which cost \$0.50 for every necklace. He sells the necklaces for \$5.00. In order to participate in the swap meet, he must also pay a vendor's fee of \$95.00. What is the minimum number of necklaces he needs to sell in order to make more money than he will spend for the event?
- F. 19
G. 20
H. 21
J. 22
K. 23
5. If the below equation is true, what must be the value of $9ab + 6$?
- $$3ab + 2 = 5$$
- A. 4
B. 10
C. 15
D. 20
E. 25
6. When you add 3 times a number x to 8, the result is 23. When you add 5 times a number y to 10, the result is 55.
- What is the value of $x - y$?
- F. -4
G. 4
H. 5
J. 9
K. 20
7. The equation below is true for all x , where a and b are constants. What is the value of ab ?
- $$(ax + 2)(7x^2 - bx + 5) = 35x^3 + 4x^2 + 21x + 10$$
- A. 1
B. 2
C. 5
D. 10
E. 20

8. Which of the following is the solution to the equation $x + 12 = 3(x + 4) - 2x$?
- F. The empty set (no solution)
 - G. $\{0\}$
 - H. $\{4\}$
 - J. $\{12\}$
 - K. The set of all real numbers

9. If $2r + 4s = \frac{t}{2}$, which of the following expressions is equivalent to $\frac{t^2}{4}$?
- A. $r + 2s$
 - B. $r^2 + 4rs + 4s^2$
 - C. $4r^2 + 16s^2$
 - D. $4r^2 + 16rs + 16s^2$
 - E. $4r^2 - 16rs + 16s^2$

10. In the expression below, a is a constant. If the expression is equivalent to bx , where b is a constant, what is the value of b ?

$$(3x + 3)(ax - 1) - x^2 + 3$$

- F. -3
 - G. -2
 - H. -1
 - J. 1
 - K. 2
11. If $-3x + 14 \geq 17 - 2x$, then which of the following must be true?
- A. $x \geq 3$
 - B. $14 \leq x \leq 17$
 - C. $x \neq -3$
 - D. $x \leq -3$
 - E. $x = -3$

12. Which of the following is the solution to the equation $3x - 5 = 4(x - 1) - x$?
- F. The empty set (no solution)
 - G. $\{1\}$
 - H. $\{4\}$
 - J. $\{9\}$
 - K. The set of all real numbers

13. c represents a constant in the equation below. If the above equation has infinitely many solutions, what must be the value of c ?

$$2x - 2 + c(2x + 3) = 10(x + 1)$$

- A. $\frac{8}{3}$
 - B. $\frac{10}{3}$
 - C. 4
 - D. 5
 - E. $\frac{20}{3}$
14. If k is a negative number, where $k > -1$, which of the following compound inequalities orders the expressions $-k^2$, k , and $\frac{1}{k}$ from least to greatest value?

- F. $\frac{1}{k} < -k^2 < k$
- G. $\frac{1}{k} < k < -k^2$
- H. $k < \frac{1}{k} < -k^2$
- J. $-k^2 < \frac{1}{k} < k$
- K. $-k^2 < k < \frac{1}{k}$

15. In the equation $ac + bcd = bd + bc$, a , b , and d represent constants greater than 1 and $a > b$. Which of the following is equal to c ?

- A. $\frac{bd}{a - b + bd}$
- B. $\frac{bd}{a + b + bd}$
- C. $a + b$
- D. $a - b + 2bd$
- E. $a + b + bd$

Key Ideas & Details – Humanities – Passage 5

This passage is adapted from “Business by the Numbers” by Natalie Harrington.

Few would imagine that the paint-by-numbers kits we remember from grade school were inspired by one of the greatest artists of all time. And yet, what may seem to us like child’s play truly did originate in the workshop of the master artist Leonardo da Vinci, where the celebrated painter would distribute numbered patterns to his apprentices as guidelines for the coloring of their underpaintings. So how was the legendary genius’s invention handed down from 15th century neophyte painters to the amateurs of today? That was the work of another type of genius: marketing genius.

Palmer Paint Co employee Dan Robbins created the first paint-by-numbers kit, called the Craft Master, in 1950, having realized that da Vinci’s pedagogical method could be used to make artists of laymen—and consequently increase the demand for paint. If the average un-trained American could pick up a brush and paint for fun with a reasonable expectation of success, Robbins realized, Palmer’s market would be vastly expanded, no longer limited to professionals. An artist himself, Robbins created a prototype and brought it to Palmer Paint Co founder Max Klein. Klein didn’t think the prototype, titled “Abstract No. 1,” had enough mass appeal to sell well, but he recognized the merit of the idea and encouraged Robbins to improve upon his design.

Robbins soon found that perfecting the paint kit was more complicated than he’d imagined. He knew he needed to find the right balance between ambitious and manageable—the end result would have to be something the amateur painter could handle, but not on his or her own, and something he or she would be proud to have completed. The abstract he’d originally proposed didn’t offer enough in the way of clear and achievable goals, but the landscapes and portraits he subsequently developed checked all the right boxes. Finally Robbins had six designs that Klein approved, and the Craft Master paint-by-numbers kit was born.

The Craft Master’s debut was unfortunately disappointing. Retailers didn’t share Robbins’s vision, and they were hesitant to place orders because they just couldn’t see the appeal. With no buyers, it seemed the product would be a flop. To make matters worse, when large-scale store chain Kresge (a forerunner of K-Mart) finally did bite, the Craft Master paint kits got their big chance—and promptly blew it. A mixup

during packaging had swapped the paints meant for “The Fishermen” with those intended for “The Bullfighter” kit, with predictably outrageous results. Customers went to Kresge for refunds, correctly assuming the bulls were not actually supposed to be green, and Kresge cut the money-losing product line from their stores.

The Palmer Paint Co now had not just paint but whole paint kits it needed to sell. Luckily, Klein had marketing savvy, and he came up with a plan to manufacture popularity. He approached Macy’s with a no-risk proposition, asking them to let Palmer demonstrate the kits in Macy’s department stores under the condition that his company would take back any unsold product. He then made sure there wouldn’t be any unsold kits to take back: he hired two sales representatives and gave them \$500 in cash to distribute to friends or family for the purchase of paint kits! Each kit cost \$2.50, so that was enough to recruit 200 buyers to come into the store. Klein hoped that those 200 sales would be enough to spark a trend, or at least help Palmer maintain credibility and continue the relationship with Macy’s. His plan couldn’t have come off better: the tide of fake customers rushing in to get their (free) paint kits caught the attention of other shoppers, and soon the kits were flying off the shelves. Klein had forgotten to note who was given the cash, so Palmer couldn’t distinguish the legitimate purchases from the phonies they paid for themselves, but once the income exceeded the \$500 expenditure and kept growing, it didn’t matter. The gambit had worked; paint kits were an unqualified success.

Clearly Klein and Robbins had been right; “A beautiful oil painting the first time you try,” as the tagline went, appealed to the general public no matter what critics and artists might think of it. Dan Robbins was only the 13th employee of Palmer Paint Co, but by 1954, the company employed 1,200 people. The massive popularity of the Craft Master kits, bought with a \$500 ploy, ultimately brought in over \$20 million in sales and catapulted Dan Robbins to new career heights. He was soon head of Palmer’s art division, overseeing a team of painters and designers working to expand the product line and keep up with demand. Today, though he is still much less well-known than da Vinci, Robbins is the most exhibited artist ever, thanks to the millions of amateur artists who have painted in his designs and displayed them proudly on their walls.

1. The author uses the term “laymen” (line 16) to refer to people who are:
 - A. lazy.
 - B. untrained.
 - C. successful.
 - D. demanding.

2. Which of the following was NOT a desirable feature of a paint kit?
 - F. It helps sell more paint.
 - G. It makes the customer proud.
 - H. It results in a painting that an amateur could have created on his or her own.
 - J. It is eventually hung on customers’ walls.

3. The best summary of the fourth paragraph is:
 - A. a series of setbacks kept the paint kits from being an instant success.
 - B. “The Fisherman” and “The Bullfighter” were poorly designed kits, leading customers to ask for refunds.
 - C. all of the paint kits were too difficult for customers to use.
 - D. like other retailers, Kresge did not see the appeal of Robbins’ vision.

4. Which of the following marketing approaches would be most similar to Klein’s plan?
 - F. Providing a coupon code to encourage more purchases of a newly designed item.
 - G. Giving pre-filled debit cards with just enough money to buy a newly designed item.
 - H. Reimbursing friends and family for purchases of a newly designed item.
 - J. Paying sales representatives to distribute a new item to prospective buyers.

5. The passage suggests that “the kits were flying off the shelves” because:
 - A. each of the customers was given \$2.50 to buy a paint kit.
 - B. paint kits were a trend due to their price.
 - C. Palmer had credibility, a relationship with Macy’s, and a successful advertising campaign.
 - D. customers saw the rush to buy paint kits and thought they should buy some too.

6. What does the author suggest when she states that “it didn’t matter” that Klein had no record of who received the cash?
 - F. The kits could be considered successful as soon as Klein recouped his initial investment.
 - G. The kits were free for most of the shoppers so the cost was irrelevant.
 - H. Klein had an existing relationship with Macy’s.
 - J. 200 buyers were not enough to spark a trend.

7. It is implied in the sixth paragraph (lines 80-96) that:
 - A. the paint kits were popular primarily because Robbins was a celebrated artist himself.
 - B. artists might have a less favorable opinion of the kits than the general public.
 - C. amateur artists were able to sell their paintings.
 - D. Klein continued to use the same marketing technique he did at Macy’s to ensure the paint kit’s popularity.

8. The passage indicates that Robbins differed from da Vinci in that:
 - F. Robbins was more famous than da Vinci.
 - G. da Vinci was a marketing genius.
 - H. Robbins’s artwork was more widely distributed than da Vinci’s.
 - J. da Vinci focused on inspiring amateur artists.

9. The final sentence of the passage can best be described as an example of:
- A. injustice.
 - B. irony.
 - C. metaphor.
 - D. simile.
10. The passage primarily focuses on:
- F. an analysis of the different painting techniques used by Robbins and da Vinci.
 - G. a guide for amateur painters who would like to get started with creating their own works of art.
 - H. a summary of the features found in a perfectly designed paint kit.
 - J. a narrative of how paint kits were made popular among amateur painters.

SAMPLE

Data Representation – Passage 2

Capacitors are capable of storing electrical energy by maintaining a differential in charge between the capacitors' plates. Capacitors do not charge or discharge energy in an instant. Over time, when voltage is supplied to a circuit with a capacitor and resistor, the charge on both capacitor plates will gradually rise until the capacitor nearly reaches the same voltage as the supply. For a resistor of R ohms and a capacitor of C Farads, it takes 5 time constants (or $5T$) for the capacitor to reach a level where it is considered fully charged. When the battery is removed and the capacitor is shorted, it takes $5T$ for the capacitor to fully discharge.

The length, in seconds, of a time constant for a circuit is the product of R and C : $T = R \times C$.

Figure 1 shows a circuit with DC battery, switch, capacitor, and resistor. Table 1 shows the percentage of maximum voltage and percentage of maximum charging current for a capacitor after a switch in the circuit is closed.

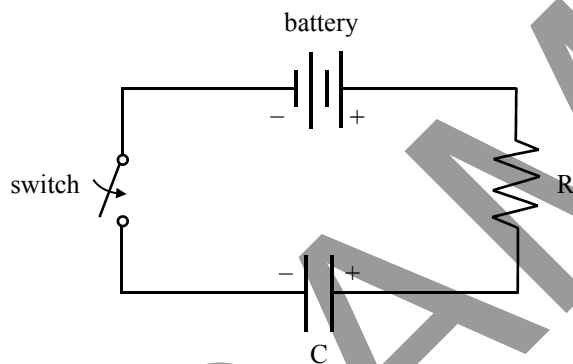


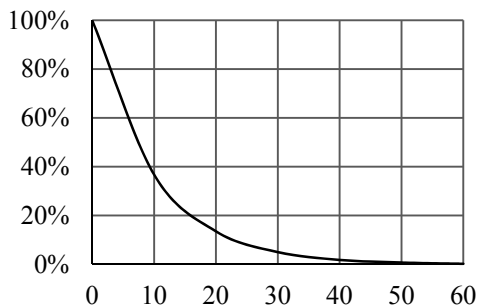
Figure 1

Time Constant	% Maximum Voltage	% Maximum Current
0	0.0%	100.0%
1	63.2%	36.8%
2	86.5%	13.5%
3	95.0%	5.0%
4	98.2%	1.8%
5	99.3%	0.7%
6	99.8%	0.2%

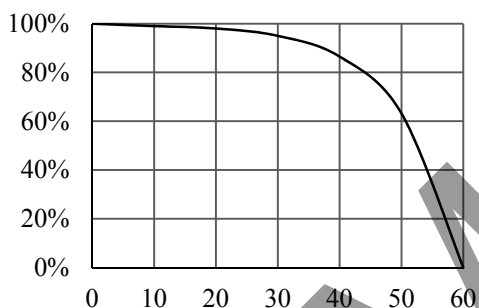
- According to the passage, what is the minimum percent maximum voltage stored in the capacitor for the capacitor to be considered fully charged?
 - 63.2%
 - 98.2%
 - 99.3%
 - 100%
- In a circuit such as the one depicted in Figure 1, if the battery is removed and the circuit is closed, the capacitor will discharge its stored energy. The capacitor discharges at a nonlinear rate similar to its rate of charge, losing 63.2% of its voltage after one time constant. For a circuit with a time constant of 6 seconds, how long will it take for the capacitor to discharge 95% of its voltage?
 - 3 seconds
 - 12 seconds
 - 18 seconds
 - 24 seconds

3. According to Table 1, for a circuit with a time constant of 10 seconds, which of the following graphs best represents the percent maximum voltage across a capacitor for the first minute after the switch is closed?

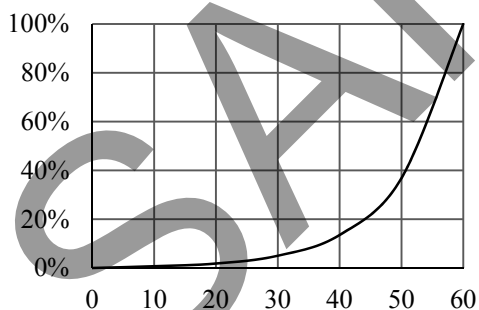
A.



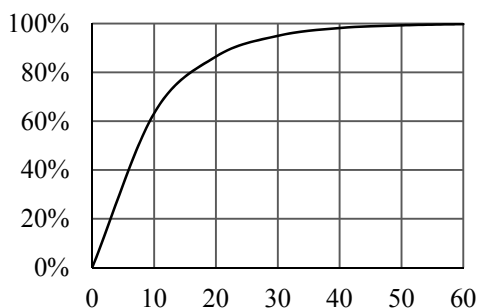
B.



C.



D.



4. If at 1.5 time constants after closing the switch, the percent maximum voltage in the capacitor is 77.7%, then which of the following must be the % maximum current traveling through the capacitor at this time?

- F. 8.2%
- G. 22.3%
- H. 25.5%
- J. 38.9%

5. A circuit designer plans to change the resistance in the resistor, R , and capacitance in the capacitor, C . Which of the following actions could possibly result in no change in the time it takes for the capacitor to fully charge?

- A. increasing both R and C
- B. increasing R and holding C constant
- C. decreasing R and increasing C
- D. decreasing both R and C

6. For a circuit such as the one depicted in Figure 1, the resistance in the resistor is 40 Ohms and the capacitance in the capacitor 0.1 Farads. According to Table 1, after the switch is closed in the circuit, how long does it take for the % maximum current for the capacitor to drop to 1.8%?

- F. 4 seconds
- G. 8 seconds
- H. 12 seconds
- J. 16 seconds

Research Summary – Passage 4

Thin layer chromatography (TLC) is a method of identifying and separating amino acids by their differences in solubility and attraction to a polar stationary plate:

1. A sheet of plastic coated in a thin layer of adsorbent silica gel, the TLC plate, is prepared by drawing a pencil line 1.5 cm from the bottom. Using separate pipets, drops of different *sample solutions*, which are labeled below the line, are applied at the appropriate positions on the line.
2. A small amount of chromatography *solvent* is poured into a glass beaker to approximately 1 cm in depth. The prepared TLC plate is then placed into the beaker such that the solvent touches the lower part of the TLC plate but does not cross the labeled line.
3. A lid is placed onto the beaker. After three hours, the solvent moves up the plate by capillary action, passes the labeled line, and carries each sample solution up the plate. Different components of the sample solution will move at different rates. The plate is removed from the beaker before the solvent reaches the top of the plate, and the solvent front is immediately marked with a line.
4. After drying, the TLC plate is sprayed with a visualizing agent. Each amino acid solution should appear as a dark spot on the TLC plate.

Each component of the sample solution is identified by a constant coefficient called the *retardation factor* (R_f). The R_f value is a ratio between the migration distance of the substance and the migration distance of the solvent front.

$$R_f = (\text{distance traveled by spot}) / (\text{distance traveled by solvent front})$$

Experiment 1

Three drops of unknown amino acids were applied to the TLC plate using the technique described. The unknown amino acids were labeled A, B, and C (see Figure 1). The solvent front was measured to be 10.0 cm from the starting point. The distance traveled by each spot was measured and recorded in Table 1.

	Distance Traveled (cm)
Spot A	6.80
Spot B	2.00
Spot C	3.90

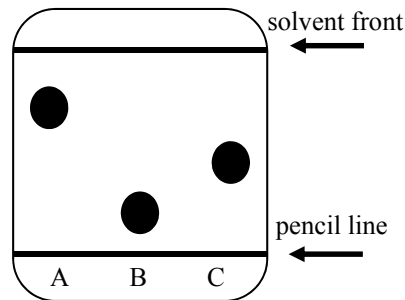


Figure 1

Table 2 shows the R_f values for various amino acids.

Amino Acid	R_f Value
Alanine	0.37
Phenylalanine	0.68
Arginine	0.20
Glycine	0.26
Glutamine	0.13
Cysteine	0.40
Methionine	0.55
Histidine	0.11
Leucine	0.74

Experiment 2

TLC can also be used to separate and identify a solution of two unknown amino acids. The unknown solution, labeled U, is applied to the TLC plate using the previous techniques. This time, the distance traveled by the solvent front was 5.0 cm. Each unknown amino acid, labeled 1 and 2 is visualized on the TLC plate (see Figure 2), with their distances traveled (see Table 3).

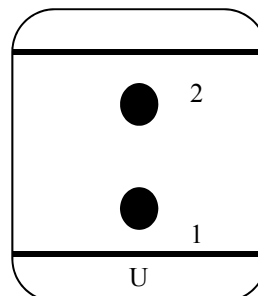


Figure 2

	Distance Traveled (cm)
Amino Acid 1	0.65
Amino Acid 2	3.70

- Why is it important that separate pipets were used for each sample solution used?
 - to ensure an equal volume of sample solution is used for each spot
 - to prevent cross-contamination from one sample solution to another
 - to ensure the chemical composition of each sample solution is identical
 - to prevent the sample solution from being contaminated by atmospheric pollutants
- The stronger the intermolecular attraction between a substance and the silica gel, the less the substance will migrate through the gel. According to the results of Experiment 1, which of the following substances has the *weakest* intermolecular attraction to the silica gel used in the TLC plate?
 - Spot A
 - Spot B
 - Spot C
 - the chromatography solvent
- Based on the results of Experiment 1, the identity of the amino acid in spot B is most likely which of the following?
 - Alanine
 - Arginine
 - Cysteine
 - Phenylalanine
- What is the most likely reason why the solvent poured into the beaker at first could not go above the line where the sample solutions were placed?
 - to ensure the sample solutions never touched the solvent throughout the experiment
 - to prevent the sample solutions from washing off the TLC plate
 - to make sure the line originally marked on the plate remained ahead of the solvent front throughout the experiment
 - to make sure the visualizing agent could be applied after drying the TLC plate
- The biologist conducting Experiment 2 hypothesized that the unknown solution contained the amino acid alanine. Do the results of the experiment *contradict* his hypothesis?
 - Yes, because the R_f values for the two spots match up to the R_f values for glutamine and leucine.
 - Yes, because the R_f values for the two spots match up to the R_f values for histidine and phenylalanine.
 - No, because the R_f value of spot 1 did match the R_f value for alanine.
 - No, because the R_f value of spot 2 did match the R_f value for alanine.
- Suppose the amino acid found in Spot C had been tested alongside the unknown solution in Experiment 2. Assuming the solvent front would have still moved 5.0 cm up the plate, approximately what distance (in cm.) would the amino acid in Spot C have migrated?
 - 1.95
 - 3.90
 - 4.40
 - 7.80
- Suppose a drop of cysteine contaminated the unknown solution. How many spots would have been visualized on the TLC plate?
 - 1
 - 2
 - 3
 - 4

be $l + 0.15l = 1.15l$. Percent change = (difference in price/original price) $\cdot 100\%$. In this case, the percent decrease in price from the increased to the final price should be

$$\frac{1.2l - 1.15l}{1.2l} \cdot 100\% = \frac{0.05l}{1.2l} \cdot 100\% \approx 4\%$$

If choosing numbers, choose 100 for the original price of the laptop and follow the same procedure.

17. (D)

Difficulty: M

Category: Geometry Foundations - Angles

Strategy: Use the relationship between angles of an isosceles triangle to find the measures of each angle in triangle BAE . Determine the measure of angle BCD by noting its relationship to angle AEB as angles formed by a transversal intersecting parallel lines.

Solution: The problem states that $AB = BE$. Therefore, triangle ABE is isosceles, and angle E must have measure 72° , since it is congruent to angle A . Angles BEA and BCD are alternating interior angles along transversal line segment EC , which intersects parallel lines. Therefore, the two angles must be congruent, and so angle BCD must measure 72° .

18. (F)

Difficulty: M

Category: Geometry Foundations - xy -plane

Strategy: Know that slope between any two points on a line remains constant. Use the formula for the slope between two points to find two different expressions for the slope in terms of p . Set them equal to each other and solve for p . For each solution, check that the slope is positive.

Solution: The slope of the line $m = \frac{p-6}{-2-2} = \frac{p-6}{-4}$ and

$$m = \frac{6-11}{2+p} = \frac{-5}{2+p}. \text{ Thus, } \frac{p-6}{-4} = \frac{-5}{2+p}. \text{ Cross-multiply to get}$$

$20 = p^2 - 4p - 12$. Set the equation equal to zero to get $p^2 - 4p - 12 = 0$. Factor to find $(p-8)(p+4) = 0$, which has solutions $p = -4$ and $p = 8$. Find the slope in each case. If $p = 8$, then the slope is $(8-6)/-4 = -1/2 < 0$, so eliminate this option. If $p = -4$, then the slope is $(-4-6)/-4 = 10/4 = 5/2 > 0$. Thus, $p = -4$.

19. (B)

Difficulty: M/H

Category: Percents

Strategy: Rewrite $1/11\%$ as a fraction or decimal and multiply by $22/5$. Compare your solution to the answer choices.

Solution: $1/11\% = (1/11)/100 = 1/1100$. $(1/1100) \cdot (22/5) = (1/100) \cdot 2/5 = (1/50) \cdot (1/5) = 1/250$. Alternatively, evaluate the answer as a decimal using a calculator. Compute the fractions in the answer choices as decimals and compare to find which one matches the solution.

20. (K)

Difficulty: M

Category: Statistics & Probability Foundations

Strategy: List the primes between 10 and 20 from smallest to largest. Find their median and average. Sum the two values.

Solution: Primes are numbers that have no other factors besides 1 and the value of the prime. The primes from 10-20 are 11, 13, 17, and 19. Their average is their sum divided by the number of them that exist $= (11 + 13 + 17 + 19)/4 = 60/4 = 15$. Their median can be found by finding the number in the middle when the numbers are arranged from smallest to greatest. 13 and 17 are both in the middle, so the

median is their average, or $(13 + 17)/2 = 15$. The sum of the average and the median is $15 + 15 = 30$.

21. (C)

Difficulty: M

Category: Fractions

Strategy: Find a common denominator for the two fractions and express the sum as a fraction over the common denominator. Find which interval this number lies inside. Alternatively, evaluate the sum as a decimal using your calculator. Compute the decimal values of $4/7$, $5/7$, and $6/7$, and compare the sum to each of these numbers.

Solution: $7/5 + -4/7 = 7 \cdot 7 / (5 \cdot 7) + 5 \cdot (-4) / (5 \cdot 7) = (49 - 20) / 35 = 29/35$. $29/35$ is between $25/35 = 5/7$ and $30/35 = 6/7$, which is the interval shown in answer choice H.

22. (J)

Difficulty: M/H

Category: Proportions

Strategy: Use the relevant data from the data to set up a proportion and solve.

Solution: In the survey, 51 of 75 people said they would support Question 2 for School Improvement. Set up a proportion to find the number of voters, x , who voted yes on this question:

$$\frac{51}{75} = \frac{x}{2400} \rightarrow 75x = 51(2400) \rightarrow x = 1632$$

23. (A)

Difficulty: M

Category: Units and Conversion

Strategy: Go through each answer choice and convert all measurements into Tun by multiplying by the correct conversion factors. Sum up the totals to see if they yield a whole number of Tuns.

Solution: Begin with answer choice A, and convert each measurement into Tuns:

$$4 \text{ quarters} \cdot \frac{1 \text{ hoghead}}{2 \text{ quarters}} \cdot \frac{1 \text{ pipe}}{2 \text{ hoghead}} \cdot \frac{1 \text{ tun}}{2 \text{ pipe}} = 0.5 \text{ tun}$$

$$2 \text{ hoghead} \cdot \frac{1 \text{ pipe}}{2 \text{ hoghead}} \cdot \frac{1 \text{ tun}}{2 \text{ pipe}} = 0.5 \text{ tun}$$

$$2 \text{ pipe} \cdot \frac{1 \text{ tun}}{2 \text{ pipe}} = 1 \text{ tun}$$

Add the three values to get 2.0 tun, which will fill 2 1.0-Tun containers to the top. All other answers will yield total volumes measuring non-integer Tun values.

24. (H)

Difficulty: H

Category: Ratios

Strategy: Using the ratio, set up a proportion to find the number of seniors that attended from each school. Find the total number of students, and then calculate the number of teachers needed to find the total.

Solution: For the two schools that sent both juniors and seniors the ratio was 1:4. Since each school sent 32 juniors, set up a proportion to find the number of seniors sent from each school: $\frac{1}{4} = \frac{32}{s}$. Solve

to find the number of seniors, $s = 128$. Therefore, the number of students sent from the two schools is $32 \cdot 2 + 128 \cdot 2 = 320$ students. Each of the five other schools also sent 128 seniors, yielding an

additional $128 \cdot 5 = 640$ students. The total number of students was $320 + 640 = 960$. The number of teachers needed is $960 \text{ students} \cdot 1 \text{ teacher}/25 \text{ students} = 38.4$ teachers. Thus, 38 teachers are needed (since there are only 38 groups of 25 in 960), and the total number of people attending is $960 + 38 = 998$ people.

25. (B)

Difficulty: H

Category: Percents

Strategy: Create an equation relating the original price to the final price that Charisma ends up paying, or carefully work backwards, one step at a time, from the final payment to the original price.

Solution: The original 30% decrease is the same as finding 70% of the original price ($100\% - 30\% = 70\%$). The rewards membership gives her another 20% discount, which is the same as finding 80% of her new price. Finally, adding a 5% tax is equivalent to finding 105% of the price before tax. Multiplying these percentages by the original price should give the final price, \$450, which can be expressed using the following equation:

Original Price $\cdot (.7) \cdot (.8) \cdot (1.05) = \450 . Solve for the original price:

$$\text{Original Price} = \frac{\$450}{(.7)(.8)(1.05)} \approx \$765.00. \text{ Of all the answer choices}$$

listed, (B) is the closest.

26. (G)

Difficulty: H

Category: Graphs & Charts

Strategy: Draw a sketch of a curve that best fits the points. Identify the best type of model that matches the shape of the sketch, and then determine the appropriate equation.

Solution: Answer choices F and J are examples of linear models. Answer choice G shows an exponential model, and choices H and K are quadratic models. A linear model is not best for this graph given the other options, as the points appear to follow a curve rather than a line. To determine whether the quadratic or exponential model is better suited, plug in some values of x into the model, and see if they closely match the graph. An easier value to test is $x = 0$ (the y -intercept). The exponential model has a y -intercept of $(0, 1.790)$, which matches the data more accurately than either of the quadratic models, which have y -intercepts at $(0, 214.62)$ and $(0, -385.38)$.

27. (E)

Difficulty: H

Category: Percents

Strategy: If choosing numbers, use 100 units as the initial share price and carry out each percentage increase or decrease sequentially. Use the percent change formula.

Solution: Let s = original share price. The 50% drop in share price leaves 50% of the original price. The 35% drop in share price the following year is the same as 65% of the new price ($100\% - 35\% = 65\%$). The following 25% drop in share price is the same as 75% of the year prior. Finally, the increase by 5% the final year is the same as finding 105% of the last year's price. Therefore, the price of the shares by the end of 2003 will be $s(0.5)(0.65)(0.75)(1.05) \approx .256s$. Percent change = (change in price)/initial price $\times 100\%$. To restore the price back to s , apply the percent change formula (the initial price will be the 2003 price):

$$\frac{s - .256s}{.256s} \cdot 100\% = \frac{.744s}{.256s} \cdot 100\% \approx 291\%.$$

Integrating Essential Skills – Multiple, Factors, & Divisibility – Pages 178-179

1. (D)

Difficulty: M

Category: Multiples, Factors, and Divisibility

Strategy: Find the prime factorization of the three numbers.

Determine the highest powers of each prime from each factorization and multiply them together to find the lowest common multiple.

Alternatively, check each answer choice to see which are divisible by 90, 70, and 40. Of those answers that satisfy this property, choose the smallest number. Alternatively, use the LCM function on a calculator to determine the lowest common multiple of the three numbers.

Solution: The prime factorization of 90 is $2^1 \cdot 3^2 \cdot 5^1$. The prime factorization of 70 is $2^1 \cdot 7^1 \cdot 5^1$. The prime factorization of 40 is $2^3 \cdot 5^1$. The lowest common multiple can be found by taking the highest power for each prime that appears in the factorizations and multiplying them together. Thus, the lowest common multiple of 90, 70, and 40 is $2^3 \cdot 3^2 \cdot 5^1 \cdot 7^1 = 8 \cdot 9 \cdot 5 \cdot 7 = 2520$.

2. (G)

Difficulty: M

Category: Multiples, Factors, Divisibility

Strategy: Make a list of all positive multiples of 12 under 200.

Determine how many of these are divisible by 20. Divide the numbers to determine the probability asked for in the problem.

Solution: The multiples of 12 that are less than or equal to 200 are: 12, 24, 36, 48, 60, 72, 84, 96, 108, 120, 132, 144, 156, 168, 180, 192. There are 16 of these numbers. Only three of those numbers (60, 120, and 180) are multiples of 20 also. Thus, the probability asked for in the problem is $3/16$.

3. (D)

Difficulty: M/H

Category: Multiples, Factors, Divisibility

Strategy: Write an expression for x as the sum of 5 and a product of 12 and some integer k . Multiply the expression by 2, and determine the remainder when the new result is divided by 6. Alternatively, find a number that gives a remainder of 5 when divided by 12. Multiply this number by 2 and divide by 6 to determine the new remainder.

Solution: x can be written as $12k + 5$, where k is any integer (this expression will always result in a remainder of 5 when divided by 12). Therefore, $2x = 24k + 10$. Thus $2x/6 = 4k + 10/6$. It is clear that $4k$ is an integer, but $10/6$ is 1 with a remainder of 4. Therefore, the answer is 4. Alternatively, choose a number for x that gives a remainder of 5 when divided by 12. One possible choice is $12 \cdot 0 + 5 = 5$. $2x = 10$, and 10 divided by 6 is 1 with a remainder of 4.

4. (J)

Difficulty: M

Category: Multiples, Factors, Divisibility

Strategy: Draw a diagram, labeling the 12 numbers around a circle. Start at 12 and circle the number. Jump ahead 8 spaces and circle the resulting number. Continue in this pattern until you land on 12 again, which will restart the cycle. Determine how many numbers are uncircled.

Solution: Sketch a clock and begin by circling the number 12. Then, jump ahead eight spaces to the number 8 and circle it. Jump ahead another eight spaces to land on the number 4 and circle it. Jump another eight to land on 12 again, which restarts the cycle. By jumping eight spaces at a time Janice will only ever land on those 3 numbers, leaving 9 that she will NEVER land on.

Key Ideas & Details – Social Science – Passage 5 – Pages 392-394

1. (A)

Category: Detail**Difficulty:** Medium**Strategy:** Go back to paragraph four, which discusses ways of salting a mine, and focus on the two main ways the author describes salting.**Solution:** lines 45-46, “a con man might ‘salt’ the area by scattering bits of gold,” and lines 47-49, “load a shotgun shell with gold particles and fire it against the walls of the mine.”

- (B) While dynamite is mentioned, there is nothing about buyers not being allowed to inspect mines.
- (C) While there is some discussion of communities working together to fool others, there is nothing about false numbers.
- (D) This is close, but some words make it incorrect. There’s no mention of “caves,” “chunks” might be too generous, and the gold isn’t being shot out but shot in.

2. (J)

Category: Detail**Difficulty:** Medium**Strategy:** Return to the end of paragraph four and consider what a geologist might do to aid in this con:**Solution:** “Even prospectors that brought... support the local communities.” Choice J covers both incorrect information and the community aspect.

- (F) No mention of reports.
- (G) Not what the geologists did.
- (H) Too extreme.

3. (A)

Category: Detail – Cause & Effect**Difficulty:** Medium**Strategy:** Go to paragraph two and find evidence to answer the question. Eliminate answers that are too extreme or false.**Solution:** “California was not incorporated into the United States and was under the legal control of the military. Thus, there were no mechanisms to enforce rights to land. For anyone who could find gold in those open spaces, it was free for the taking.” Choice A paraphrases the evidence from paragraph two.

- (B) Too extreme. While the area was under the control of the military, there’s no mention of it being ineffective.
- (C) Not true. California wasn’t considered its own country.
- (D) Inaccurate. There’s no mention of conflicting governments.

4. (F)

Category: Main Idea**Difficulty:** Easy**Solution:** The focus of the passage is on how mines were salted.

- (G) Too broad. The focus is on gold mines.
- (H) Incorrect. The methods are of trickery, not of actual mining.
- (J) Too narrow. This is only a portion of the paragraph.

5. (C)

Category: Inference**Difficulty:** Medium**Strategy:** Eliminate answers that are too extreme.**Solution:** Choice C is the most accurate without being too extreme.

- (A) While they may tell lies, “incapable of telling the truth” is extreme.
- (B) Incorrect. Given the quote, Twain doesn’t appear to think that assessment is the problem.
- (D) Too extreme. To say they are worth nothing isn’t true.

6. (J)

Category: Detail**Difficulty:** Medium**Strategy:** Go back to the last paragraph to find the reason behind the inflated value**Solution:** Lines 71-76 – “Michael de Guzman, a mining prospector, had promoted the portion of land as a jackpot of gold. To prove the claim’s worth, he provided several core samples, which showed an abundance of gold waiting to be excavated.” Later, it’s noted the evidence was faked, as he used gold from his own wedding ring.

- (F) No mention of fool’s gold.
- (G) The other company is mentioned but not as a reason to up the mine’s value.
- (H) Uses some words from the last paragraph, but doesn’t properly answer the question.

7. (B)

Category: Generalization**Difficulty:** Medium**Strategy:** Reread the fourth paragraph and summarize it in your own words. Then, look for the answer that most closely matches your predicted answer.**Solution:** Guzman did lie, estimates rose, and the truth was uncovered.

- (A) There is no mention of suspicions or that the other company was brought in for this reason.
- (C) Doesn’t capture the main idea and is also inaccurate.
- (D) There’s no evidence of Guzman being encouraged or fined.

8. (J)

Category: Detail – Compare & Contrast**Difficulty:** Medium**Strategy:** Eliminate answers that are partially or wholly wrong.**Solution:** The incidents in the 1800s are talked about as a group, while the modern scandal is a more isolated example.

- (F) This sounds plausible, but there’s no technological element to the modern scandal.
- (G) Both are related to money, so “territorial claims” doesn’t work, even though this is brought up in an earlier paragraph.
- (H) Both involved spreading small amounts of gold. In the modern example, gold from a wedding ring was used.

9. (B)

Category: Main Idea**Difficulty:** Medium**Strategy:** Use process of elimination.**Solution:** Choice B is accurate for the information in the passage.

- (A) There’s no implication that miners’ time should have been spent differently.
- (C) Too extreme. While this is one way miners earned income, there’s no evidence that it was the “primary” way.
- (D) No evidence.