GMAT OFFICIAL GUIDE

MOCKTEST

Quantitative Reasoning

Question 1- 22

Q.1

A certain candy bar is packaged in boxes of two sizes; 1 small box and 1 large box together contain 15 of the candy bars. If 4 small boxes and 2 large boxes together contain 40 of the candy bars, how many candy bars are packaged in 1 large box?

Options:
A. 3
B. 4
C. 5
D. 8
E. 10

Correct Answer: E

Q.2

State X has 77 acres designated as wilderness, which is 0.0003 percent of its total acreage. Which of the following expresses the total acreage of State X?

Options:
A. $3(10^4)(77)$
B. $3(10^6)(77)$
C. $(10^2)(77)/3$
D. $(10^4)(77)/3$
E. $(10^6)(77)/3$

Correct Answer: E

Q.3

Last year in City X, the range of daily low temperatures, in degrees Fahrenheit, was 20 for the month of June and 25 for the month of July. Which of the following is the smallest possible range of City X's daily low temperatures, in degrees Fahrenheit, for the two-month period of June and July of last year?

Options:
A. 5
B. 20

C. 25
D. 30
E. 45

Correct Answer: C

Q.4

A 5-digit identification code is to be created as a sequence that contains each integer in the set {1, 2, 3, 4, 5} exactly once. If all identification codes are possible except those containing even integers next to each other, how many different identification codes are possible?

Options:
A. 120
B. 96
C. 72
D. 48
E. 24

Correct Answer: C

Q.5

During a certain year, 80 percent of the visitors to the Smithsonian Institution were United States citizens, 50 percent of the remaining visitors were Canadian or Mexican citizens, and 50 percent of the visitors who were not citizens of the United States, Canada, or Mexico were citizens of European countries. The number of United States citizens who visited the Smithsonian that year was approximately how many times the number of citizens of European countries who visited the Smithsonian that year?

Options:
A. 1.6
B. 4.8
C. 8
D. 16
E. 32

Correct Answer: D

Q.6

Candidate McFee received 12,000 votes, which was 1/4 of the total number of votes. If x additional people had voted and each had voted for McFee, then McFee would have received 1/3 of the total number of votes. What is the value of x?

Options:
A. 8,000
B. 6,000
C. 4,000
D. 3,000
E. 2,000

Correct Answer: B

Q.7

If y is the average (arithmetic mean) of 15 consecutive positive integers, which of the following must be true?

I. y is an integer.
II. $y > 7$
III. $y < 100$

Options:
A. I only
B. II only
C. III only
D. I and II
E. II and III

Correct Answer: A

Q.8

The distance between Town R and Town S is 209 miles. At noon yesterday, a motorist started from Town R and drove to Town S at a constant speed of 40 miles per hour, and another motorist started from Town S and drove along the same route to Town R at a constant speed of 55 miles per hour. What was the motorists' distance, in miles, from Town R when they passed each other?

Options:
A. 80
B. 88
C. 95
D. 100
E. 114

Correct Answer: B

Q.9

Working together at their respective constant rates, machine R, machine S, and machine T can produce a batch of parts in 4 hours. If machine R, working alone at its constant rate, can produce the same batch of parts in 6 hours, how many hours would it take machine S and machine T, working together at their respective constant rates, to produce the same batch of parts?

Options:
A. 6
B. 8
C. 10
D. 12
E. 14

Correct Answer: D

Q.10

f $x = \sqrt[3]{(a^6)}$, $y = \sqrt[3]{(b^6)}$, $b \neq 0$, and $a = 4b$, then $x/y =$

Options:
A. 4
B. 8
C. 16
D. 32
E. 64

Correct Answer: C

Q.11

If x, y, and z are positive integers such that $1/x + 1/y + 1/z = 1$, which of the following could be the value of $x + y + z$?

I. 7
II. 9
III. 11

Options:
A. I only
B. II only
C. III only
D. I and II
E. II and III

Correct Answer: E

Q.12

From a piece of wire 0.5 meter long, a machine cuts off a piece 0.005 meter long. The remaining piece is how many times as long as the piece that was cut off?

Options:
A. 5
B. 99
C. 100
D. 495
E. 1,000

Correct Answer: B

Q.13

Which of the following is equivalent to $(10^2)^{(n+1)}$?

Options:
A. $10^2(10^{(2n)})$
B. $10^2(10^{(n+1)})$
C. $10^{(2n+3)}$
D. $10(10^{(2n)})$
E. $(10^{(2n)})^2$

Correct Answer: A

Q.14

What is the largest integer n such that $1/2^n > 0.01$?

Options:
A. 5
B. 6
C. 7
D. 10
E. 51

Correct Answer: B

Q.15

Which of the following is equal to $(1/(\sqrt{3} - \sqrt{2}))^2$?

Options:
A. 1
B. 5
C. $\sqrt{6}$

D. $5 - \sqrt{6}$
E. $5 + 2\sqrt{6}$

Correct Answer: E

Q.16

Which of the following is least?

Options:
A. −32/73
B. −13/23
C. −12/25
D. −8/17
E. −7/16

Correct Answer: B

Q.17

If $\sqrt{(9x - 1)} = \sqrt{(4x)}$, then x =

Options:
A. 1/9
B. 1/7
C. 1/4
D. 1/5
E. 1

Correct Answer: D

Q.18

If x is a k-digit integer and $x = (4^9)(5^{17})$, what is the value of k?

Options:
A. 16
B. 17
C. 18
D. 19
E. 20

Correct Answer: C

Q.19

The function f is defined for all positive numbers x by $f(x) = 1/x$. What is the value of $f(f(2) + f(1/3))$?

Options:
A. 2/7
B. 2/3
C. 3/2
D. 7/3
E. 7/2

Correct Answer: A

Q.20

If $x > 0$, which of the following is equal to $\sqrt{(32x^5)}$?

Options:
A. $2x\sqrt{(8x^4)}$
B. $16x\sqrt{(2x)}$
C. $4x^2\sqrt{(2x)}$
D. $8x^2\sqrt{(2x^3)}$
E. $8x^4\sqrt{(4x)}$

Correct Answer: C

Q.21

If x is a multiple of 18 and 60, then x must be divisible by which of the following?

I. 24
II. 36
III. 45

Options:
A. I only
B. II only
C. I and II only
D. II and III only
E. I, II, and III

Correct Answer: D

VERBAL ABILITY

Question 1- 23

Q.1

To facilitate development of telephone service in a rural province, the national government pays the provincial government a subsidy for each long-distance call going into the province. A corporation has offered to base a national long-distance telephone service in the province, allowing long-distance calls to be made without any charge to the callers, if the provincial government splits its subsidy with the corporation. The corporation argues that since all calls would be routed through the province, the provincial government would profit greatly from this arrangement.

The corporation's prediction about the effects its plan would have, if adopted, relies on which of the following assumptions?

Options:
A. Without the plan, all long-distance telephone service in the province would involve at least some charges to callers.
B. The national government's subsidy would apply not only for calls made to phones in the province, but also to at least some long-distance calls that are merely routed through the province.
C. The provincial government would be interested in splitting its subsidy with the corporation only if doing so would yield significant profits for the province.
D. The national government's subsidy for any long-distance call into the province is calculated as a fixed percentage of the charge to the caller.
E. In order for the arrangement to be profitable for the province, the province must receive more from the increased subsidy than it pays the corporation.

Correct Answer: E

Q.2

According to results from brain scans, the insula—a brain area associated in part with pain—exhibits heightened activity when consumers think about how much a purchase will cost. In a recent study, researchers auctioned off tickets to a sold-out event. Half the study participants were to use cash to buy the tickets, while the other half were to pay by credit card. The credit card buyers bid, on average, twice as much as the cash buyers bid. This shows that credit cards, because they involve paying later, limit consumers' thoughts about price: credit card users are willing to spend more money because they experience less pain.

The reasoning above relies on which of the following assumptions?

Options:
A. In the study, the participants did not generally prefer to pay for tickets with a check drawn from a bank.
B. Most people exhibit similar levels of insula activity when thinking about a product's price.

C. In the study, the credit card buyers were not, on average, significantly more interested in attending the event than the cash buyers were.
D. Consumers cannot control the amount of time they spend thinking about an item's price.
E. In general, consumers do not consider an item's price before deciding on a payment method.

Correct Answer: C

Q.3

Folic acid is a nutrient present in leafy vegetables and some other foods. In the blood, folic acid inhibits the formation of substances found in arterial blockages that commonly cause heart attacks. Moreover, in a long-term study of 10,000 individuals, the subgroup with the highest blood levels of folic acid had fewer heart attacks than the subgroup with the lowest levels. Therefore, a decrease in dietary folic acid will increase the risk of a heart attack.

Which of the following, if true, would most strengthen the argument?

Options:
A. Many of the people who had heart attacks during the study were eating a high-fat diet, which is known to contribute to the formation of arterial blockages.
B. Folic acid cannot be synthesized or stored by the body.
C. Arterial blockages usually take years to develop.
D. The group that had the fewest heart attacks also had the best exercise habits.
E. The subjects in the study were tested for folic acid levels most frequently in the first two years of the study.

Correct Answer: B

Q.4

A primary concern among manufacturers polled in a 1998 survey was the inefficiency of trade promotions—inducements offered by manufacturers to retailers to encourage them to reduce retail prices temporarily so as to boost sales volume. Such inducements may include temporarily reduced costs of goods, free goods, or display allowances (fees manufacturers pay retailers to encourage them to allocate premium shelf space to a product). At the heart of manufacturers' dissatisfaction lies concern regarding widespread retailer opportunism. Although consumers know from experience the approximate frequency of promotional pricing, they do not typically have complete information about ongoing trade promotions in a given period, so retailers can profit by sometimes choosing not to pass along their own savings to their customers. Inefficient use of trade promotion dollars has prompted several large manufacturers to adopt an "everyday low price" policy for their goods, but at least **one diaper manufacturer** found it had to revert to its former pricing strategies in the face of increasing promotional competition from other brands. Adopting an alternative approach, some manufacturers have themselves advertised ongoing promotions. By informing at least some customers about promotions, manufacturers believe they

can regulate retailer opportunism by increasing customers' propensity to search for discounted prices.

It can be inferred that the diaper manufacturer mentioned in the highlighted text of the passage discovered that consumers

Options:
A. were unlikely to continue to purchase a brand that had a lower regular price in the face of temporary discounts on diapers of other brands
B. tended to equate higher prices on diapers with higher quality, and so were willing to pay full price for expensive brands
C. usually became loyal to a particular brand of diaper and would purchase that brand whether or not it was on sale
D. bought fewer diapers per shopping trip when they knew the diapers would always be available at the same "everyday low price"
E. were more willing to search for discounted prices on diapers than for other products typically available in the same stores

Correct Answer: A

Q.5

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The author of the passage would be most likely to agree with which of the following statements about consumers' knowledge of retail pricing strategies?

Options:
A. Consumers believe that retailers do not have the option to charge full price for items that

manufacturers tell them to discount.
B. Consumers assume that a retailer who offers discounts on some items will inflate the prices of other items to compensate for it.
C. Consumers are aware that they can expect to find familiar brands available at discounted prices at fairly predictable intervals.
D. Consumers believe that retailers must pay the same price for goods whether or not they offer them at a discount to customers.
E. Consumers often do not realize that price discounts typically originate from manufacturers rather than individual retailers.

Correct Answer: C

Q.6

A primary concern among manufacturers polled in a 1998 survey was the inefficiency of trade promotions—inducements offered by manufacturers to retailers to encourage them to reduce retail prices temporarily so as to boost sales volume. Such inducements may include temporarily reduced costs of goods, free goods, or display allowances (fees manufacturers pay retailers to encourage them to allocate premium shelf space to a product). At the heart of manufacturers' dissatisfaction lies concern regarding widespread retailer opportunism. Although consumers know from experience the approximate frequency of promotional pricing, they do not typically have complete information about ongoing trade promotions in a given period, so retailers can profit by sometimes choosing not to pass along their own savings to their customers. Inefficient use of trade promotion dollars has prompted several large manufacturers to adopt an "everyday low price" policy for their goods, but at least one diaper manufacturer found it had to revert to its former pricing strategies in the face of increasing promotional competition from other brands. Adopting an alternative approach, some manufacturers have themselves advertised ongoing promotions. By informing at least some customers about promotions, manufacturers believe they can regulate retailer opportunism by increasing customers' propensity to search for discounted prices.

According to the passage, some manufacturers have attempted to counteract retailer opportunism by

Options:
A. selling goods to retailers at reduced prices
B. offering more frequent but less potentially lucrative promotions
C. alerting consumers when promotions are happening
D. offering certain goods to retailers at no charge
E. paying retailers fees to prominently display certain goods

Correct Answer: C

Q.7

In an experiment that lasted several weeks, volunteers were given either an assortment of snacks or only corn chips between meals. Beforehand, most volunteers predicted that they would be more satisfied with an assortment of snacks rather than just one kind of snack. But afterward, those who received only corn chips reported greater satisfaction. The researchers concluded from this that people tend to mistakenly believe that they prefer variety to monotony in their diets.

Which of the following, if true, would most strengthen the researchers' reasoning?

Options:
A. Before the experiment, most volunteers said that corn chips were their favorite snack among those offered.
B. Other researchers have found that variety in diet is more satisfying than variety in other experiences.
C. The volunteers were not informed beforehand that those who did not receive an assortment of snacks would receive only corn chips.
D. The volunteers who received only corn chips were free to eat a wide assortment of foods for their main meals.
E. In a separate taste test, most people found the corn chips to be less appetizing than any other snack the volunteers received.

Correct Answer: E

Q.8

Many companies today are making new product development a central element of their competitive strategy. Because the potential benefits of successful product innovation are great—prolonged growth, superior financial returns, and strong investor interest—many companies offer employees incentives such as promotions and bonuses for developing new products, incentives not offered for innovations in other areas of the business. Firms' priorities can also be shaped by their measurement systems since these systems can directly measure returns from new products more immediately than they can measure returns from investments in such areas as organizational restructuring or innovations in marketing.

But the organizational culture of such companies can hurt them in the marketplace because a narrow focus on product development can ultimately detract from a firm's performance. For instance, a company's ability to profit from new products can be severely hampered if it has neglected other functions and business processes. If a company develops a superior new product but is unable to distribute and promote it rapidly, competitors with better distribution systems may copy the product and introduce it into the market before the innovator can profit from its innovation. In contrast, effective distribution, marketing, and accounting systems—that is, strong overall business systems—can act as entry barriers, deterring would-be competitors from entering a particular market.

The passage suggests which of the following about companies' investment in the development of new products?

Options:
A. Heavy investment in the development of new products is a less risky business practice than most business leaders believe.
B. Companies might invest less heavily in the development of new products if company executives felt equally able to measure the results of investments in all areas of business innovation.
C. Companies are most likely to focus their investment on the development of new products if they perceive competitors to lack strong overall business systems.
D. While investment in the development of new products can bring greater returns to companies than can investment in other areas of a business, the benefits are usually short-lived.
E. It is generally more expensive for companies to invest in the development of new products than to invest in such things as organizational restructuring or the development of new marketing practices.

Correct Answer: B

Q.9

Many companies today are making new product development a central element of their competitive strategy. Because the potential benefits of successful product innovation are great—prolonged growth, superior financial returns, and strong investor interest—many companies offer employees incentives such as promotions and bonuses for developing new products, incentives not offered for innovations in other areas of the business. Firms' priorities can also be shaped by their measurement systems since these systems can directly measure returns from new products more immediately than they can measure returns from investments in such areas as organizational restructuring or innovations in marketing.

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The primary purpose of the passage is to

Options:
A. explain the way in which a particular aspect of organizational culture affects employees'

performance
B. explain why new product development confers less advantage on companies today than it did in the past
C. argue that a particular strategy for enhancing a company's position against competitors may prove unsuccessful
D. argue that a company's organizational culture may be more important than its competitive strategy in ensuring financial success
E. suggest a way in which companies can increase their profits without developing new products

Correct Answer: C

Q.10

Many companies today are making new product development a central element of their competitive strategy. Because the potential benefits of successful product innovation are great—prolonged growth, superior financial returns, and strong investor interest—many companies offer employees incentives such as promotions and bonuses for developing new products, incentives not offered for innovations in other areas of the business. Firms' priorities can also be shaped by their measurement systems since these systems can directly measure returns from new products more immediately than they can measure returns from investments in such areas as organizational restructuring or innovations in marketing.

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It can be inferred from the passage that the author would be most likely to agree with which of the following statements about organizational culture?

Options:
A. Organizational culture is the primary determinant of a company's competitive position in a given market.
B. Many companies' organizational cultures are such that employee contributions in certain areas that might enhance those companies' competitiveness are not rewarded.
C. The narrowness of many companies' organizational cultures is evident in those companies' failure to reward sufficiently those employees who help to develop successful new products.
D. A company's organizational culture is likely to undergo significant change if the company is

able to develop a new product and market it successfully.
E. The nature of a company's organizational culture tends to be more evident in its distribution system than in its degree of commitment to new product development.

Correct Answer: B

Q.11

Just as paleontologists claim that ecologists' findings about the evolution and extinction of species help eliminate discontinuities in the history of life on Earth, ecologists have recently found that paleontology aids in predicting the effects of rapid climate change and habitat destruction. For example, one paleontological study, in which pollen found in lake sediments was analyzed to determine how North American forests responded to the last ice age, supports one side of a debate over the stability of "ecological communities," or species that evolved in proximity to each other and with some degree of interdependence. Pro-stability ecologists believe that such communities are quite stable due to strong interdependence—so that, for example, tree species that evolve together as a community can be expected to remain together since each significantly affects immediate environmental factors such as soil chemistry and shade. But while the pollen study did indicate that advancing glaciers caused the gradual relocation of three tree species—birch, fir, and spruce—that had comprised one community, it also supported the assumption of anti-stability proponents that the three species did not, after all, move together as would the inhabitants of a town resettling *en masse* during flooding. Instead, the spruce trees began to share an ecosystem with sedge grasses, becoming part of an entirely different community.

The passage is primarily concerned with

Options:
A. demonstrating that paleontologists have made important contributions to the study of the effects of habitat destruction during the last ice age
B. countering the theory that species in ecological communities are stable and interdependent
C. analyzing the reasons for the debate about the interdependence of species in ecological communities
D. presenting an example of how the findings of paleontologists can illuminate questions in the field of ecology
E. tracing the effects of rapid climate change on a given ecological community of tree species

Correct Answer: D

Q.12

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destruction. For example, one paleontological study, in which pollen found in lake sediments was analyzed to determine how North American forests responded to the last ice age, supports one side of a debate over the stability of "ecological communities," or species that evolved in proximity to each other and with some degree of interdependence. Pro-stability ecologists believe that such communities are quite stable due to strong interdependence—so that, for example, tree species that evolve together as a community can be expected to remain together since each significantly affects immediate environmental factors such as soil chemistry and shade. But while the pollen study did indicate that advancing glaciers caused the gradual relocation of three tree species—birch, fir, and spruce—that had comprised one community, it also supported the assumption of anti-stability proponents that the three species did not, after all, move together as would the inhabitants of a town resettling *en masse* during flooding. Instead, the spruce trees began to share an ecosystem with sedge grasses, becoming part of an entirely different community.

It can be inferred from the passage that the proponents of the anti-stability view of ecological communities would be likely to agree with which of the following statements?

Options:
A. Since future climate changes are expected to be rapid, there is little reason to try to predict their effects on the basis of the effects of past climate changes.
B. Although an ecological community includes species that evolved in association with each other, changes in the environment can alter the degree of their interdependence.
C. When the species of trees belonging to a single ecological community are forced to relocate, those species will lose their interdependence gradually.
D. At the onset of the last ice age, birches and firs did not provide the optimum shade or soil composition for spruces.
E. At the onset of the last ice age, birches, nor firs were compatible with sedge grasses.

Correct Answer: B

Q.13

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relocation of three tree species—birch, fir, and spruce—that had comprised one community, it also supported the assumption of anti-stability proponents that the three species did not, after all, move together as would the inhabitants of a town resettling *en masse* during flooding. Instead, the spruce trees began to share an ecosystem with sedge grasses, becoming part of an entirely different community.

The author of the passage implies that the findings of the pollen study are likely to

Options:
A. cause pro-stability ecologists to redefine an ecological community as a group of species that are in constant, although gradual, migration
B. help paleontologists answer long-standing questions about the effect of tree communities on soil chemistry
C. help ecologists predict the possible effects of climate changes on ecological communities of tree species
D. support the assertion of pro-stability ecologists that ecological communities remain intact when forced by climate change to relocate
E. support the assertion of pro-stability ecologists that ecological communities remain intact when forced by climate change to relocate

Correct Answer: C

Q.14

A certain new banking firm was created as a joint venture of the companies that had previously been the sole owners of X Bank and the Bank of Y brands. When this new firm began closing down several X Bank locations, the firm encouraged customers of those locations to switch to using Bank of Y instead, but many of the customers refused. The new firm's CEO concluded from this and the fact that the company that owned X Bank originally is still intact, that the customers of X Bank who refused to switch did so because they were more loyal to the bank's brand name than to the bank's ownership.

Which of the following is an assumption on which the CEO's reasoning depends?

Options:
A. All of the customers who switched were aware that a new firm owned both bank brands.
B. At least some of the customers who refused to switch instead became customers of other banks.
C. The customers' refusal to switch was based on reasons related to loyalty.
D. At least some of the customers who switched did so because of loyalty to the new firm.
E. Most of the customers who refused to switch were unaware that the companies that owned the two bank brands had merged.

Correct Answer: C

Q.15

Historians create ideas we call "history," which are derived from an order existing in the real world of historical fact. Since the patterns discovered in that world depend in part on the aims of the investigator, however, historical periods will tend to be defined in incompatible ways by historians with different interests. Thus, insofar as the aims of historians of music, painting, literature, and poetry are different, it cannot be assumed that _____.

Which of the following most logically completes the argument?

Options:
A. real-world facts about art will ever be accurately represented
B. the accounts of these historians will ever be anything but arbitrary
C. the periods of artistic style delineated by these historians will coincide
D. the historical patterns defined by these historians will differ appreciably
E. there are any facts from which patterns of artistic style may be derived

Correct Answer: C

Q.16

Recent photographs of the planet Venus reveal long lines that appear to be the result of massive streams of lava from volcanic eruptions. However, the lines cannot have originated from lava flows, since some of these lines are over 1,000 miles long, and recently acquired evidence shows that the surface temperature of Venus is not high enough to allow molten lava to travel much more than 200 miles before solidifying.

For an evaluation of the argument, it would be most useful to determine whether

Options:
A. craters formed by meteor impacts on Venus could have made some of the lines shorter than they originally were
B. the photographs of Venus reveal some mountain peaks that could only have been formed by volcanic eruptions
C. there still exist active volcanoes on Venus that could cause new lava flows to occur
D. mountain ranges might have prevented lava flows from extending farther than they would have if they had not encountered such obstructions
E. at the time the lines were formed, the surface of Venus was substantially closer to the temperature at which lava melts than it is now

Correct Answer: E

Q.17

Light exists on a spectrum of frequencies extending from gamma rays at the highest frequencies to radio waves at the lowest, though human eyes are sensitive to only a narrow range of

frequencies in the middle known as the visible spectrum. The different colors we see correspond to the different frequencies of light within that range. Given that there are so many frequencies of light, one might wonder why our eyes didn't evolve to be sensitive to more frequencies.

Gamma rays from space collide with Earth's atmosphere, which converts some of their energy to heat and creates a distinctive cascade of subatomic particles down toward the ground. However, the rays themselves are entirely absorbed before they can reach Earth's surface. Thus, Earth would appear to be pitch black to eyes that were only sensitive to gamma rays. Similarly, the majority of frequencies of light that are higher or lower than those in the visible spectrum—such as ultraviolet and most infrared frequencies, respectively—are mostly or entirely absorbed by Earth's atmosphere.

One reason we see the frequencies we do is that visible-spectrum light generally passes through our atmosphere without being absorbed or reflected. Another reason is that the Sun, in some respects an average star, emits most of its light at frequencies in the visible spectrum, whereas a hot star emits most of its light at ultraviolet frequencies and a very cool star emits most of its light at infrared frequencies. Indeed, to remarkably high precision, the human eye is most sensitive to the exact frequency in the yellow part of the spectrum at which the Sun is the brightest.

Even if there are living beings on other planets, it is not likely that they would see mainly at very different frequencies than we do. Virtually all gases that are abundant in the cosmos tend to allow frequencies in the visible spectrum to pass through while absorbing other frequencies, and all but the coolest stars put out much, if not most, of their light in the visible spectrum. If there are living beings on other planets, they probably see at roughly the same frequencies as we do, though there may be occasional exceptions.

According to the passage, humans evolved eyes sensitive to a particular part of the spectrum of light in part because

Options:
A. Earth's atmosphere filters out most of the light emitted by the Sun
B. that part of the spectrum constitutes the full range of frequencies that can penetrate Earth's atmosphere
C. Earth is primarily composed of materials that do not absorb light in that part of the spectrum
D. the majority of the Sun's light is emitted at frequencies in that part of the spectrum
E. most other frequencies of light are reflected by Earth's atmosphere

Correct Answer: D

Q.18

Light exists on a spectrum of frequencies extending from gamma rays at the highest frequencies to radio waves at the lowest, though human eyes are sensitive to only a narrow range of

frequencies in the middle known as the visible spectrum. The different colors we see correspond to the different frequencies of light within that range. Given that there are so many frequencies of light, one might wonder why our eyes didn't evolve to be sensitive to more frequencies.

Gamma rays from space collide with Earth's atmosphere, which converts some of their energy to heat and creates a distinctive cascade of subatomic particles down toward the ground. However, the rays themselves are entirely absorbed before they can reach Earth's surface. Thus, Earth would appear to be pitch black to eyes that were only sensitive to gamma rays. Similarly, the majority of frequencies of light that are higher or lower than those in the visible spectrum—such as ultraviolet and most infrared frequencies, respectively—are mostly or entirely absorbed by Earth's atmosphere.

One reason we see the frequencies we do is that visible-spectrum light generally passes through our atmosphere without being absorbed or reflected. Another reason is that the Sun, in some respects an average star, emits most of its light at frequencies in the visible spectrum, whereas a hot star emits most of its light at ultraviolet frequencies and a very cool star emits most of its light at infrared frequencies. Indeed, to remarkably high precision, the human eye is most sensitive to the exact frequency in the yellow part of the spectrum at which the Sun is the brightest.

Even if there are living beings on other planets, it is not likely that they would see mainly at very different frequencies than we do. Virtually all gases that are abundant in the cosmos tend to allow frequencies in the visible spectrum to pass through while absorbing other frequencies, and all but the coolest stars put out much, if not most, of their light in the visible spectrum. If there are living beings on other planets, they probably see at roughly the same frequencies as we do, though there may be occasional exceptions.

The main purpose of the passage is to

Options:
A. present certain facts about the cosmos that indicate probable limits to the frequencies of light that living beings would be able to see
B. explain why certain frequencies of light outside the visible spectrum are not abundant in the cosmos
C. discuss the manner in which various forms of matter are affected by interaction with different frequencies of light
D. describe why average stars tend to emit more light at visible-spectrum frequencies than they do at other frequencies
E. discuss whether the temperature of the closest star to a planet affects the frequencies of light that living beings could potentially see

Correct Answer: A

Q.19

Light exists on a spectrum of frequencies extending from gamma rays at the highest frequencies to radio waves at the lowest, though human eyes are sensitive to only a narrow range of frequencies in the middle known as the visible spectrum. The different colors we see correspond to the different frequencies of light within that range. Given that there are so many frequencies of light, one might wonder why our eyes didn't evolve to be sensitive to more frequencies.

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Even if there are living beings on other planets, it is not likely that they would see mainly at very different frequencies than we do. Virtually all gases that are abundant in the cosmos tend to allow frequencies in the visible spectrum to pass through while absorbing other frequencies, and all but the coolest stars put out much, if not most, of their light in the visible spectrum. If there are living beings on other planets, they probably see at roughly the same frequencies as we do, though there may be occasional exceptions.

The reasoning in the final paragraph most strongly implies that the author makes which of the following assumptions?

Options:
A. The vast majority of the planets in the cosmos have atmospheres.
B. Living beings that evolve on planets orbiting hot stars are more likely to develop the capacity to see than are living beings that evolve on planets orbiting average-temperature stars.
C. Living beings are most likely to evolve on planets with atmospheres for accomspheres containing gases that are abundant in the cosmos.
D. Living beings is most likely on planets orbiting the hottest stars, they will likely develop eyes that they will likely develop the capacity to see.
E. The frequencies of light that pass through a planet's atmosphere without being absorbed are the frequencies that the nearest star emits most abundantly.

Correct Answer: C

Light exists on a spectrum of frequencies extending from gamma rays at the highest frequencies to radio waves at the lowest, though human eyes are sensitive to only a narrow range of frequencies in the middle known as the visible spectrum. The different colors we see correspond to the different frequencies of light within that range. Given that there are so many frequencies of light, one might wonder why our eyes didn't evolve to be sensitive to more frequencies.

Gamma rays from space collide with Earth's atmosphere, which converts some of their energy to heat and creates a distinctive cascade of subatomic particles down toward the ground. However, the rays themselves are entirely absorbed before they can reach Earth's surface. Thus, Earth would appear to be pitch black to eyes that were only sensitive to gamma rays. Similarly, the majority of frequencies of light that are higher or lower than those in the visible spectrum—such as ultraviolet and most infrared frequencies, respectively—are mostly or entirely absorbed by Earth's atmosphere.

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Even if there are living beings on other planets, it is not likely that they would see mainly at very different frequencies than we do. Virtually all gases that are abundant in the cosmos tend to allow frequencies in the visible spectrum to pass through while absorbing other frequencies, and all but the coolest stars put out much, if not most, of their light in the visible spectrum. If there are living beings on other planets, they probably see at roughly the same frequencies as we do, though there may be occasional exceptions.

Which of the following most accurately describes the purpose of the highlighted sentence in relation to the passage as a whole?

Options:
A. To indicate the author's surprise at the manner in which human eyes have developed in relation to the visible spectrum of light
B. To illustrate that the correspondence between human eyes' sensitivity and the frequencies of light comprising the visible spectrum is not merely coincidental
C. To assert that human eyes are more finely tuned to a particular part of the visible spectrum of light than are those of some other organisms on Earth
D. To explain why the gases that comprise Earth's atmosphere do not absorb the frequencies of light that the sun emits most abundantly

E. To explain why the gases that comprise Earth's atmosphere do not absorb the frequencies of light that the sun emits most abundantly

Correct Answer: B

Q.20

Under laboratory conditions, fruit flies can learn to respond to odors that elicit no response from them in nature. Mutant fruit flies that cannot produce a certain enzyme are, however, incapable of such learning. These mutant flies respond to other odors just as ordinary fruit flies do. Thus it is unlikely that the enzyme's absence impairs fruit flies' perception of odors since, presumably, **fruit flies would not have an enzyme that was needed only for the perception of odors that fruit flies do not respond to in nature**. Instead, what the enzyme's absence probably impairs is the fruit flies' ability to learn, since **many researchers believe that this enzyme is somehow involved in the process of forming memories**.

In the argument given, the two boldfaced portions play which of the following roles?

Options:
A. The first is evidence that has been used to corroborate a judgment that the argument contends is false; the second is that judgment.
B. The first is a hypothesis that the argument opposes; the second is a judgment that has been advanced in support of that hypothesis.
C. The first is the hypothesis that the argument as a whole seeks to establish; the second provides support for that hypothesis.
D. The first presents an explicit assumption that is introduced in arguing for the position that the argument adopts; the second provides evidence to support that hypothesis.
E. The first offers justification for an assumption that is explicitly made in the argument; the second provides evidence to support that hypothesis.

Correct Answer: D

Q.21

Ancient Greek vase-painting provides a consistent portrayal of satyrs (mythological part-goat, part-human creatures) as comic social creatures, fond of wine and given to excess. The statue known as the Barberini Faun is notably different in its depiction. Although scholars agree that the figure is a satyr, the only indication of its wilder, animal nature is a small tail. Apart from this, the figure appears to be a calm, solemn, well-muscled man who is situated in obvious isolation from others. These facts suggest that the statue portrays not just any satyr, but the satyr that King Midas captured by drugging its drink with a sleeping potion.

Which of the following, if true, would most strengthen the argument above?

Options:
A. The location of the figure suggests that it is vulnerable to attack.
B. The satyr in the Midas myth is typically described as a serious and temperate creature.
C. Grapes and ivy around the figure's head indicate its association with wine.
D. The depicted length of a satyr's tail did not always symbolize a satyr's tendency to excess.
E. The Barberini Faun was discovered in the same area as a vase painted with a sleeping potion.

Correct Answer: A

Q.22

Recording executive: Many musicians resent Web sites that allow people to copy music free of charge. The musicians argue, among other things, that each person who chooses to copy a song from such a Web site represents less profit for the song's creator. However, by providing free publicity for the musician, the widespread copying of a song over the Internet appears to increase record sales. There is a strong correlation between increases in the popularity of a song on music-copying Web sites and increases in sales of the album containing that song.

The recording executive's reasoning is most vulnerable to criticism on which of the following grounds?

Options:
A. It overlooks the possibility that two correlated phenomena stem independently from some third factor and that neither causes the other.
B. It fails to adequately address the possibility that even if a phenomenon causes a certain effect in some instances, it may have the opposite effect in other instances.
C. It takes for granted that if a practice increases overall record sales, then musicians have no legitimate reason to resent that practice.
D. It requires the assumption, for which no support is provided, that significant sales of an album containing a song seldom occur before that song becomes popular on music-copying Web sites.
E. It overlooks the possibility that most of the songs in albums that are copied are not previously been copied by the purchasers from any music-copying web site.

Correct Answer: A

Q.23

To facilitate development of telephone service in a rural province, the national government pays the provincial government a subsidy for each long-distance call going into the province. A corporation has offered to base a national long-distance telephone service in the province, allowing long-distance calls to be made without any charge to the callers, if the provincial government splits its subsidy with the corporation. The corporation argues that since all calls would be routed through the province, the provincial government would profit greatly from this arrangement.

The corporation's prediction about the effects its plan would have, if adopted, relies on which of the following assumptions?

Options:
A. Without the plan, all long-distance telephone service in the province would involve at least some charges to callers.
B. The national government's subsidy would apply not only for calls made to phones in the province, but also to at least some long-distance calls that are merely routed through the province.
C. The provincial government would be interested in splitting its subsidy with the corporation only if doing so would yield significant profits for the province.
D. The national government's subsidy for any long-distance call into the province is calculated as a fixed percentage of the charge to the caller.
E. In order for the arrangement to be profitable for the province, the province must receive more from the increased subsidy than it pays the corporation.

Correct Answer: E

Data Insights

Question 1- 20

Q.1

The table shows information about the 6 types of specialty screws manufactured by ACME Hardware. These screws can be purchased at the ACME Factory Outlet or by placing a special order with the company. A person must place a special order with ACME to purchase the listed types of screws that are not available at the ACME Factory Outlet. No special order is required for the listed types that are available at the factory outlet.

Type	Head shape	At factory outlet?	Drive type	Price per box of 50
E	pan	yes	flat	$10.08
F	round	yes	Phillips	$13.89
G	button	yes	flat	$10.42
H	pan	no	Phillips	$11.98
I	round	yes	Phillips	$16.74
J	pan	no	flat	$18.26

For each of the following purchases, select **Requires special order** or **Does not require special order**.

1. Purchase 50 ACME specialty screws with the button head shape and a flat drive type
2. Purchase 50 ACME specialty screws with the pan head shape and the Phillips drive type
3. Purchase 250 ACME specialty screws with the Phillips drive type for less than $65

Correct Answers:

1. **Does not require special order** — Button + flat = Type G, which IS available at the factory outlet (yes). Your selection of "Requires special order" is incorrect.
2. **Requires special order** — Pan + Phillips = Type H, which is NOT available at the factory outlet (no). Your selection of "Does not require" is incorrect.
3. **Requires special order** — The Phillips-drive types available at the outlet are F ($13.89/box) and I ($16.74/box). For 250 screws (5 boxes), the cheapest possible using only outlet stock is 5 × $13.89 = $69.45, which is more than $65. To get below $65, you need Type H ($11.98/box × 5 = $59.90), which is not available at the outlet and requires a special order. Your selection of "Does not require" is incorrect.

Q.2

When all the boxes in a warehouse were arranged in stacks of 8, there were 4 boxes left over. If there were more than 80 but fewer than 120 boxes in the warehouse, how many boxes were there?

(1) If all the boxes in the warehouse had been arranged in stacks of 9, there would have been no boxes left over.
(2) If all the boxes in the warehouse had been arranged in stacks of 12, there would have been no boxes left over.

Options:
A. Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
C. BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
D. EACH statement ALONE is sufficient.
E. Statements (1) and (2) TOGETHER are NOT sufficient.

Correct Answer: A

Q.3

For a certain radio station in India, the table shows the songs ranked among the top 10 during Week W.

Week W rank	Song	Previous week's rank	Weeks in top 20	Peak rank
1	A	1	4	1
2	B	2	10	1
3	C	6	3	3
4	D	4	6	4
5	E	3	11	1
6	F	n/a	1	6
7	G	5	9	3
8	H	10	3	8
9	I	12	5	9
10	J	13	2	10

For each question, select **Can be answered** or **Cannot be answered** using only the information in the table.

1. How many of the top 5 songs for Week W had a higher rank for Week W than they did for the previous week?
2. How many of the top 10 songs for Week W were not among the top 10 in the previous week?
3. How many of the top 10 songs for the week immediately prior to Week W have ever been at ranking 1?

Correct Answers:

1. **Can be answered** — Comparing Week W rank to previous rank for songs A–E: A(1 vs 1, same), B(2 vs 2, same), C(3 vs 6, improved), D(4 vs 4, same), E(5 vs 3, worsened). Only Song C improved (higher rank = lower number = better). Answer: 1 song.
2. **Can be answered** — A song not among the previous week's top 10 is indicated by "n/a" in the Previous week's rank column. Only Song F has "n/a." Answer: 1 song.
3. **Cannot be answered** — This question asks about the top 10 songs from the week *immediately prior to* Week W, which may include songs not currently in Week W's top 10 (any song with a previous rank ≤10 belongs there, but if a song dropped out of the current top 10 entirely, that song's identity and peak rank are not given in this table). We don't

have complete information (peak rank, etc.) for any song that was in last week's top 10 but isn't in this week's top 10 — so we cannot fully determine the answer.

Q.4

Researchers carried out a study of the calorie content of meals in 89 fast food restaurants, using a diverse group of approximately 3,300 participants. The researchers collected receipts from the participants to calculate the calorie content of their meals, and then they administered a short questionnaire asking participants to estimate the calorie content of their meals. The average (arithmetic mean) calorie content of the meals was 775, and the participants underestimated the calorie content of their meals by an average of 200 calories. Two-thirds of all participants underestimated the calorie content of their meals, with approximately one-quarter of all participants underestimating the calorie content by at least 500 calories.

Approximately ***1*** of the participants underestimated the calorie content of their meals, and approximately ***2*** of the participants underestimated the calorie content by at least 500 calories.

Options: 275, 575, 825, 1,100, 2,200, 3,300

Correct Answers: Blank 1 = **2,200**, Blank 2 = **825**

Reasoning:

Blank 1: Two-thirds of all participants underestimated the calorie content.

Two-thirds of 3,300 = (2/3) × 3,300 = **2,200**

Blank 2: Approximately one-quarter of *all* participants underestimated by at least 500 calories (the passage states "one-quarter of all participants," not one-quarter of those who underestimated).

One-quarter of 3,300 = (1/4) × 3,300 = **825**

Q.5

With the exception of Q, the books—P, Q, R, and S—on Ethan's desk are such that the page numbered 1 is on the right of the book. Ethan kept an important note in one of the books. Later, he forgot which book it was—but he accurately recalled having placed the note between pages 536 and 537 of a book with an entirely orange cover. Ethan knew the page numbering scheme and the number of pages in all four books. He also knew that in each of the books, the pages are numbered consistently and consecutively throughout the book. How many books did Ethan need to check to find the note?

(1) Each of P and S has fewer than 500 pages.
(2) P and S have entirely blue covers.

Options:
A. Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
C. BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
D. EACH statement ALONE is sufficient.
E. Statements (1) and (2) TOGETHER are NOT sufficient.

Correct Answer: D

Q.6

Question 1

The cost of a certain school trip was $16 for each child and $24 for each adult. What was the ratio of the number of children to the number of adults on the trip?

(1) The ratio of the total cost of the trip for all children to the total cost of the trip for all adults was 8 to 3.
(2) The total cost of the trip for all children and adults together was $2,200.

Options:
A. Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
C. BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
D. EACH statement ALONE is sufficient.
E. Statements (1) and (2) TOGETHER are NOT sufficient.

Correct Answer: A

Q.7

The 50 participants of a management training seminar ate dinner at a certain restaurant. They had 3 choices for their meal: vegetarian lasagna for $12, blackened catfish for $15, or stuffed pork chops for $18. Each participant ordered exactly 1 meal and the total cost of the meals ordered by the participants was $810. How many participants of the management training seminar ordered blackened catfish?

(1) Six more people ordered catfish than lasagna.
(2) Twice as many pork chop meals were ordered as catfish meals.

Options:
A. Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.

C. BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
D. EACH statement ALONE is sufficient.
E. Statements (1) and (2) TOGETHER are NOT sufficient.

Correct Answer: D

Q.8
Discussion

In recent years traffic congestion has become increasingly severe at the intersection of two busy roads, Province Highway and Central Highway. This intersection lies between Weston and Eastburg on Province Highway and between South City and Northville on Central Highway. A stoplight at the intersection controls traffic flow. The stoplight's signals operate on a repeated cycle with fixed timing, always directing traffic to flow according to the following order (there are brief gaps in time between each of the following to ensure that traffic has cleared the intersection):

1. First, all and only the traffic traveling straight along Province Highway, from both directions
2. Second, all and only the traffic turning left off of Province Highway, from both directions
3. Third, all and only the traffic traveling straight along Central Highway, from both directions
4. Fourth, all and only the traffic turning left off of Central Highway, from both directions
5. Fifth, all and only the traffic turning right off of either highway, in all directions

Highway planners intend to change the timing of the signals for weekdays so that the length of each signal during the cycle is proportional to the number of vehicles passing through the intersection on a typical weekday morning in the directions controlled by that signal.

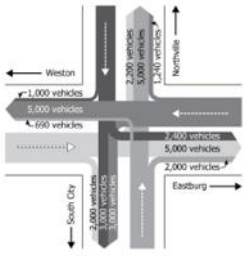
Signal times

The table below shows how long the stoplight's signals currently allow traffic flowing along either road to proceed straight along, turn left off of, and turn right off of, the road at the intersection during any one cycle. The gaps in time between each step in the pattern are not included in the times given below.

Direction	Province Highway	Central Highway
Left turn	20 seconds	30 seconds
Right turn	40 seconds	40 seconds
Straight	60 seconds	80 seconds

Traffic Flow

The diagram below shows the numbers of vehicles traveling in various directions through the intersection on a typical weekday morning. White arrows indicate the directions of traffic flow through the intersection on a typical weekday morning. Black arrows next to the names of towns indicate the direction from the intersection to the towns named. The number of vehicles traveling from a given direction to the intersection is represented by a gray bar, which splits to show how many vehicles turn left, turn right, or continue straight at the intersection.



Based on the information provided, what fraction of the number of vehicles on typical weekday mornings, passing through the intersection **from Weston**, passes through the intersection during the current 20-second-long stoplight signals?

Options:
A. 23/233
B. 5/23
C. 11/46
D. 55/211
E. 25/72

Correct Answer: B (5/23) — already selected ✓

Q.9

The diagram shows vehicle counts by direction (left turn / straight / right turn) entering the intersection:

- Weston (west): left = 1,000, straight = 5,000, right = 690
- Northville (north): left = 2,200, straight = 5,000, right = 1,240
- Eastburg (east): left = 2,400, straight = 5,000, right = 2,000
- South City (south): left = 2,000, straight = 3,000, right = 3,000

From the Signal Times table, the **40-second signal** corresponds to the right-turn phase (right turn off Province Highway = 40 seconds; right turn off Central Highway = 40 seconds — these occur simultaneously as the single "right turn, all directions" phase).

For each number, select **Yes** if it is the number of vehicles passing through the intersection **from one specific direction** during this 40-second (right-turn) signal.

Correct Answers:

- **1,000 → No** — This is Weston's *left*-turn count, not a right-turn count. It does not match any direction's right-turn figure (690, 1,240, 2,000, or 3,000).
- **2,000 → Yes** — This matches Eastburg's right-turn count of 2,000 vehicles.
- **3,000 → Yes** — This matches South City's right-turn count of 3,000 vehicles.

Your current selections (1,000 = Yes; 2,000 = No; 3,000 = No) are all incorrect. The correct pattern is **No / Yes / Yes**.

Q.10

The diagram below shows the numbers of vehicles traveling in various directions through the intersection on a typical weekday morning. White arrows indicate the directions of traffic flow through the intersection. Black arrows next to the names of towns indicate the direction from the intersection to the towns named. The number of vehicles traveling from a given direction to the intersection is represented by a gray bar, which splits to show how many vehicles turn left, turn right, or continue straight at the intersection.

For each of the following quantities, select **Yes** if it can be deduced from the information provided. Otherwise, select **No**.

1. The number of vehicles passing straight through the intersection on Central Highway on a typical weekday morning
2. The current duration in seconds, including gaps, of one full cycle on the stoplight's signals
3. The percent of the vehicles passing through the intersection on a typical weekday morning that turn left off Province Highway, from both directions

Correct Answers:

1. **Yes** — The traffic flow diagram shows the breakdown (left/straight/right) of vehicles entering from both Northville and South City (which are the two directions along Central Highway). Adding the straight-through portions from both directions gives the total straight-through traffic on Central Highway, so this can be deduced.

2. **No** — The Signal Times table gives the duration of each individual signal phase (left, right, straight for each highway), but explicitly states these times do **not** include the gaps between phases. Since the gap durations are unknown, the total cycle time *including gaps* cannot be determined.
3. **Yes** — The traffic flow diagram gives the number of vehicles turning left from Weston (entering from the west) and from Eastburg (entering from the east) — these are the two directions of Province Highway. The diagram also gives the total number of vehicles passing through the intersection overall, so the percentage of all vehicles that turn left off Province Highway (from both directions) can be calculated.

Q.11

Jan and 5 of his friends sold candy bars to raise money for their school trip. Jan sold 20 bars and each of his 5 friends sold at least one bar. Did Jan sell more candy bars than each of at least 3 of his friends?

(1) The median of the number of bars sold by Jan's 5 friends is 18.
(2) The average (arithmetic mean) of the number of bars sold by Jan's 5 friends is 12.

Options:
A. Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
C. BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
D. EACH statement ALONE is sufficient.
E. Statements (1) and (2) TOGETHER are NOT sufficient.

Correct Answer: D

Q.12

Question 1

Each dinner at Restaurant X includes a pair of side dishes, which a customer chooses by selecting any one side dish from list A and any one side dish from list B. There are a total of 18 possible pairs of side dishes, and no side dish appears on both lists. If there are fewer side dishes on list A than on list B, how many side dishes are on list B?

(1) There are a total of 9 side dishes on the two lists.
(2) There are a total of 3 side dishes on list A.

Options:
A. Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.

B. Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
C. BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
D. EACH statement ALONE is sufficient.
E. Statements (1) and (2) TOGETHER are NOT sufficient.

Correct Answer: D

Reasoning:

Let a = number of side dishes on list A, b = number on list B, with a × b = 18 and a < b.

Possible factor pairs of 18 where a < b: (1,18), (2,9), (3,6)
(Note: (9,2) and (18,1) and (6,3) are excluded since a < b is required)

Statement (1): a + b = 9

Check each pair: (1,18)→sum=19; (2,9)→sum=11; (3,6)→**sum=9** ✓

Only (3,6) works → unique: b = **6**. **Sufficient.**

Statement (2): a = 3

From a × b = 18: b = 18/3 = **6**. **Sufficient.**

Since each statement alone yields b = 6, the correct answer is **D**.

Q.13

The graph shows the number of vehicles entering and exiting an intersection by direction, for each possible trajectory (combination of direction entered from and direction exited to).

Approximate values from the chart:

Entered from	Exited to	Vehicles
north	east	~88
north	south	~83
north	west	~73
east	north	~58
east	south	~52
east	west	~48
south	north	~93

south	east	~88
south	west	~85
west	north	~43
west	east	~88
west	south	~33

During the hour, the greatest number of vehicles entered the intersection from the ___, and among those vehicles entering the intersection from that direction, the greatest number of vehicles exited the intersection to the ___.

Correct Answers: Entered from **south**; Exited to **north**

Reasoning:

Summing by direction entered:

- North: 88+83+73 = 244
- East: 58+52+48 = 158
- South: 93+88+85 = **266** (greatest)
- West: 43+88+33 = 164

So the greatest number of vehicles entered from the **south**.

Among vehicles entering from the south, the breakdown is: north (93), east (88), west (85). The greatest is to the **north**.

Q.14

The graph shows the cumulative global wind capacity (the capacity for generating electricity with wind turbines), in megawatts, as of the end of each of the years 2009–2013.

Year	Cumulative Capacity (MW)
2009	159,000
2010	198,000
2011	238,100
2012	283,200
2013	318,100

The greatest one-year increase in megawatts of wind capacity occurred in ___, and the greatest one-year percent increase in wind capacity occurred in ___.

Correct Answers: Megawatt increase greatest in **2012**; Percent increase greatest in **2010**

Q.15

The graph shows the average (arithmetic mean) mature tree heights of each of Species A–C at each of the Tree Farms W–Z.

Tree Farm	Species A	Species B	Species C
W	25	31	44
X	28	32	46
Y	26	39	43
Z	27	38	46

Based on the information provided, select from each drop-down menu the option that creates the most accurate statement.

For the 4 tree farms, the sum of the average mature heights of Species A, B, and C is greatest for Tree Farm ___.

For the 3 species, the standard deviation of the 4 average mature heights given on the graph is greatest for Species ___.

Correct Answers: Tree Farm **Z**; Species **B**

Reasoning:

First blank (sum):

- W: 25+31+44 = 100
- X: 28+32+46 = 106
- Y: 26+39+43 = 108
- Z: 27+38+46 = **111** (greatest)

Your selection of "X" is incorrect — the greatest sum is at Tree Farm **Z** (111), not X (106).

Second blank (standard deviation):

- Species A values: 25, 28, 26, 27 — mean = 26.5; these values are tightly clustered (small spread)
- Species B values: 31, 32, 39, 38 — mean = 35; these values are spread further apart (larger spread)

- Species C values: 44, 46, 43, 46 — mean = 44.75; tightly clustered (small spread)

Calculating approximate variances: Species A ≈ 1.25, Species B ≈ 12.5, Species C ≈ 1.69

Species B has by far the largest spread/standard deviation. Your selection of "A" is incorrect — the correct answer is Species **B**.

Q.16

Question 1

The velocity, V feet per second, of a model rocket t seconds after launch is given by $V = -32t + C$, where C is a positive constant. What is the velocity of the rocket 2 seconds after it was launched?

(1) The rocket reaches its maximum height and begins descending 1.5 seconds after it was launched.
(2) The rocket's initial velocity was 48 feet per second.

Options:
A. Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
B. Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
C. BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
D. EACH statement ALONE is sufficient.
E. Statements (1) and (2) TOGETHER are NOT sufficient.

Correct Answer: D

Q.17

During a given legislative session, Committee X gives higher priority to bills as the level of each of several factors increases: public interest in the bill; its contentiousness; its scale; the uncertainty about it; and the ongoing relevant research. In a recent session, Committee X reviewed exactly three bills: A, B, and C. All had the same level of public interest. Bill A had the highest level of contentiousness; Bill B had the highest level of uncertainty; Bills A and B had the same levels of scale and ongoing relevant research; and Bill C had the lowest levels of contentiousness, scale, uncertainty, and ongoing relevant research.

During the legislative session, Committee X gave Bill A the highest priority.

It would help explain the priority given to Bill A if it were true that Committee X gave a higher priority for the level of ***1*** than it did for the level of ***2***.

Options: public interest / contentiousness / scale / uncertainty / ongoing relevant research

Correct Answer: Blank 1 = **contentiousness**, Blank 2 = **uncertainty**

Reasoning:

Bill A has the highest contentiousness among the three bills, but Bill B has the highest uncertainty (not A). Since A and B are tied on scale and ongoing relevant research, and both have the same public interest as C, the key difference between A and B comes down to contentiousness (A wins) vs. uncertainty (B wins).

For Bill A to receive the *highest* priority overall despite B leading in uncertainty, the committee must weigh contentiousness more heavily than uncertainty — i.e., give a higher priority to the contentiousness factor than to the uncertainty factor. This explains why A's advantage in contentiousness outweighs B's advantage in uncertainty.

Your current selections (contentiousness / scale) are partially correct — blank 1 (contentiousness) is right, but blank 2 should be **uncertainty**, not scale, since scale is tied between A and B and doesn't explain why A beats B.

Q.18

A peculiarity of marketing campaigns across several social media websites is that, to compete effectively for people's attention, such campaigns require multiple daily updates of small amounts of information. At first glance, this would seem to require a smaller time commitment than would most traditional marketing campaigns, but the fragmentation of target audiences across different social media websites means this time commitment, and the necessary marketing budget, is often quite comparable. Furthermore, different social media websites have different limitations and user interfaces. However, by understanding these differences and the audiences that use each of the social media sites, a company has the unique opportunity to shape messages to appeal specifically to each audience.

Statement: As compared to most traditional marketing campaigns, a peculiarity of marketing campaigns across several social media websites is that they require ***1***, but a company can turn this feature to its advantage by creating ***2***.

Select for 1 and for 2 the options that complete the statement so that it most accurately reflects the information provided.

Options: more frequent updates / greater time commitments / greater amounts of information / more-specific message targeting / larger marketing budgets

Correct Answer: Blank 1 = **more frequent updates**, Blank 2 = **more-specific message targeting**

Reasoning:

Blank 1: The passage opens by stating that, to compete for attention, social media campaigns require multiple daily updates of small amounts of information — this is the defining "peculiarity." This matches "more frequent updates" directly. "Greater time commitments" is actually contradicted by the passage, which says the time commitment ends up comparable to traditional campaigns, not greater — and that's not even framed as the initial peculiarity itself.

Blank 2: The passage's final sentence states that by understanding the different audiences and limitations of each social media site, a company can shape messages to appeal specifically to each audience — directly matching "more-specific message targeting." "Greater amounts of information" contradicts the passage, which specifically says campaigns require small amounts of information, not greater amounts.

Your current selections (greater time commitments / greater amounts of information) are both incorrect.

Q.19

An individual is comparing the charges of two electricians. The first electrician charges a set fee for coming to the individual's home and charges an hourly rate that is half of the second electrician's hourly rate. The second electrician charges no fees for coming to the individual's home. The individual will have no charges other than those mentioned.

Select for *First electrician's set fee* and for *Second electrician's hourly rate* the two figures, in US dollars ($), that could be the first electrician's set fee and the second electrician's hourly rate such that both figures would result in the two electricians charging the same amount for coming to the individual's home and working for exactly one hour. Make only two selections, one in each column.

Options for both columns: $10, $30, $50, $80, $100

Correct Answer: First electrician's set fee = **$50**, Second electrician's hourly rate = **$100**

Reasoning:

Let F = first electrician's set fee, h = second electrician's hourly rate.
First electrician's hourly rate = h/2 (half of second's rate).

For 1 hour of work:

- First electrician's total = F + h/2

- Second electrician's total = h (no set fee)

Setting them equal: F + h/2 = h → **F = h/2**

Testing the available values for h to see if h/2 is also in the list:

- h = $100 → F = $50 → **$50 is in the list!** ✓

No other value of h produces an F value also present in the option list (h=10→F=5; h=30→F=15; h=50→F=25; h=80→F=40 — none of these match available choices).

Check: First electrician = 50 + 100/2 = 50 + 50 = $100. Second electrician = $100. Equal ✓

Your current selection (Second electrician's hourly rate = $50) is incorrect — the correct selections are **First electrician's set fee = $50** and **Second electrician's hourly rate = $100**.

Q.20

In four years, Ramona's age in years will be twice Charlie's age in years.

In the table, select values that, according to the given information, could be Ramona's and Charlie's present ages in years. Make only two selections, one in each column.

Ramona	Charlie	
○	◉	2
○	○	12
○	○	14
◉	○	20
○	○	24
○	○	28

In four years, Ramona's age in years will be twice Charlie's age in years.

In the table, select values that, according to the given information, could be Ramona's and Charlie's present ages in years. Make only two selections, one in each column.

Options for both columns: 2, 12, 14, 20, 24, 28

Correct Answer: Ramona = **28**, Charlie = **12**

Reasoning:

Let R = Ramona's present age, C = Charlie's present age.

In four years: R + 4 = 2(C + 4)

$R = 2C + 8 - 4 = 2C + 4$

Now test which pair from the list satisfies this:

- $C = 2$: $R = 2(2)+4 = 8$ → not in list
- $C = 12$: $R = 2(12)+4 =$ **28** → in list! ✓
- $C = 14$: $R = 2(14)+4 = 32$ → not in list
- $C = 20$: $R = 44$ → not in list

So the only valid combination is **Ramona = 28, Charlie = 12**.

Check: In 4 years, Ramona = 32, Charlie = 16. Is $32 = 2 \times 16$? Yes ✓

Your current selections (Ramona = 20, Charlie = 2) are incorrect — in 4 years that would be Ramona = 24, Charlie = 6, and $24 \neq 2 \times 6 = 12$.