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Topic Break Down

Topic	No. of Questions
Topic 1, Quantitative Reasoning	239
Topic 2, Verbal Reasoning	208
Topic 3, Mix Questions	1
Total	448

QUESTION NO: 1

For a certain cube, 3 deferent edges that do not at meet at a single vertex are to be painted red. How many different selections of the 3 different edges to be painted red are possible?

A. 56

B. 112

C. 120

D. 212

E. 504

ANSWER: D

Explanation:

212 is correct. A cube has 12 edges, so the number of unordered selections of 3 distinct edges is \(\binom{12}{3}=220\). This is a combinations problem because a selection is determined solely by which three edges are painted; the order in which they are chosen or painted has no effect. The condition excludes precisely those selections in which all three selected edges meet at one vertex. At each vertex of a cube, exactly three edges are incident, creating one excluded selection: the set consisting of those three edges. Because a cube has 8 vertices, there are 8 such excluded edge selections. No one triple of distinct cube edges can meet at two different vertices, so these 8 excluded selections are distinct. Therefore, the number of permitted selections is \(220-8=212\). For background on using combinations to count unordered selections, see Khan Academy's counting and combinations material. The cube's structure, including its 12 edges and 8 vertices, is summarized by Wolfram MathWorld.

QUESTION NO: 2

The company's choice of Mr. Frederick for the position was based mostly on his being mote of a manager than the other candidates.

A. mostly on his being more of a manager than the other candidates

B. mostly from the fact that he was more a manager than the other candidates

C. mostly on the fact that he was more of a manager than on what the other candidates were

D. more on his being a manager than what the other candidates were

E. on the fact of he being more a manager than the other candidates were

ANSWER: A

Explanation:

The correct revision is **"mostly on his being more of a manager than the other candidates"** because it produces an idiomatic, grammatically complete construction: a choice may be "based on" a characteristic, and "his being" correctly names the relevant quality as a noun phrase. The comparison is also logically parallel. Mr. Frederick's degree of being a manager is compared with the degree to which the other candidates are managers. In this context, "more of a manager" is an established idiomatic expression meaning that he possesses managerial qualities to a greater extent. The phrase "mostly" properly modifies the basis for the company's decision, indicating that this qualification was the principal reason for the choice. The revision also preserves the intended meaning without introducing unnecessary wording or shifting the comparison away from the candidates' relative managerial ability. GMAT sentence-correction-style editing emphasizes clear, concise, grammatically sound sentences with logical comparisons and effective diction. See GMAC's discussion of Verbal Reasoning skills at GMAT Verbal Reasoning and Purdue OWL's guidance on comparisons at Parallel Structure.

QUESTION NO: 3

last year Country X generated 3 times as many kilowatt-hours of electricity as Country Y, but both countries generated the same amount of electricity from nuclear power plants. If Country X generated * percent of Its electricity from nuclear power plants, what percent of Country Y*s electricity was generated from nuclear power plants?

A)

B)

C)

D)

2k

E)

3k

A. Option A

B. Option B

C. Option C

D. 2k

E. 3k

ANSWER: E

Explanation:

3k is correct. Let Country Y's total electricity generation be represented by a quantity of 1. Because Country X generated three times as much electricity, its total generation was 3. Country X generated k percent of its total electricity from nuclear plants, so its nuclear generation was k percent of 3, or 3k percent of Country Y's total-generation unit. The countries generated equal amounts of nuclear electricity, so Country Y's nuclear generation must also equal that same quantity. Since Country Y's total generation is 1 unit, its nuclear generation represents 3k percent of its electricity. Thus, Country Y generated **3k percent** of its electricity from nuclear power plants. This is a proportional-reasoning problem: when the numerator (nuclear output) remains fixed while the total output is one-third as large, the percentage is three times as large. For additional guidance on the quantitative skills tested by GMAT questions, see the GMAT Exam format and content overview and the official GMAT preparation resources.

QUESTION NO: 4

Although abundant in many areas of the southern United States, the evening bat has always been uncommon to rare across the northern part of its range—most of Illinois, Indiana, and Ohio—their already small populations decreasing even further during the latter part of the twentieth century.

A. their already small populations decreasing

B. and already low populations decreased

C. and their already small populations decreased

D. their already low numbers decreasing

E. and its already low numbers decreased

ANSWER: E

Explanation:

“and its already low numbers decreased” correctly completes the sentence because it supplies a coordinated finite verb phrase that matches the sentence’s singular subject, “the evening bat.” In this context, “the evening bat” names a species as a single grammatical unit, so the possessive pronoun must be singular: “its.” The phrase also clearly states that the species’ numbers fell further during a specific past period, “the latter part of the twentieth century,” making the simple past verb “decreased” appropriate. The conjunction “and” links the two related facts about the species: it has been uncommon or rare in the northern portion of its range, and its numbers then declined further during the stated historical period. This construction avoids leaving the final portion as an unattached descriptive fragment and preserves a clear, logical relationship between the species and its population trend. GMAT Verbal questions test whether wording conveys the intended meaning with grammatical agreement and logical sentence structure; see the official GMAT exam structure overview and the official GMAT preparation guidance.

QUESTION NO: 5

Although New York City was planning a huge reception to welcome Amelia Earhart home from her solo trans-Atlantic flight in 1932, she telegraphed Mayor James Walker

requesting that they cancel the ceremonies, with the money being spent on the needs of the unemployed.

A. that they cancel the ceremonies, with the money being

B. that they cancel the ceremonies and the money to be

C. that the ceremonies be canceled and that the money be

D. the cancellation of the ceremonies and the money to be

E. the cancellation of the ceremonies, with the money

ANSWER: C

Explanation:

“that the ceremonies be canceled and that the money be” correctly completes the sentence because it creates two parallel requests governed by “requesting.” Earhart requested, first, that the ceremonies be canceled and, second, that the money be spent on the needs of unemployed people. Repeating “that” makes the two requested actions unmistakably coordinate, while the verb form “be” is the present subjunctive, the standard formal construction after a verb or noun expressing a request, recommendation, demand, or necessity.

The resulting structure is both grammatically complete and logically precise: “the ceremonies” is the thing to be canceled, and “the money” is the thing to be spent. The passive forms also fit the intended meaning, because Earhart was asking city officials to arrange the cancellation and redirect the funds rather than personally performing either action. This use of the subjunctive is consistent with standard American English grammar guidance for clauses following expressions of request. See the Purdue Online Writing Lab guide to the subjunctive mood and the Merriam-Webster explanation of subjunctive constructions.

QUESTION NO: 6

In the xy-plane, the point (0,3) is the vertex of a certain right angle. If the sides of the right angle intersect the x-axis at the points (-4,0) and (b,0), what is the value of b?

A-

$\frac{7}{4}$

B-

$\frac{9}{4}$

C-

$\frac{7}{2}$

D- 5

E- 7

A. Option A

B. 9/4

C. Option C

D. Option D

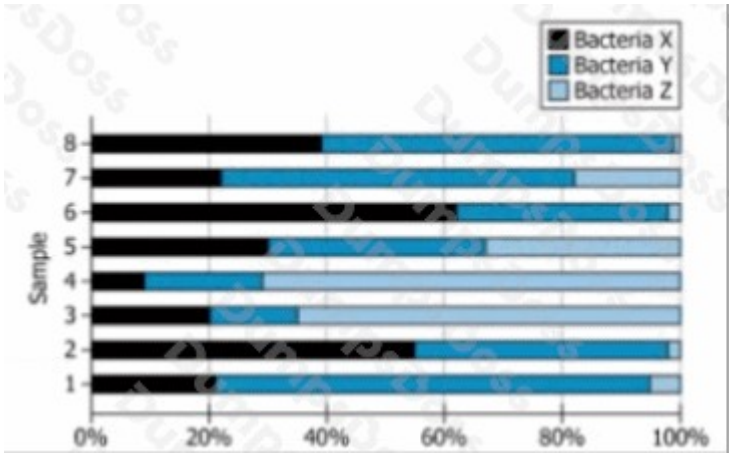
E. Option E

ANSWER: B

Explanation:

The value of *b* is **9/4**. The two sides of the right angle are the line segments from the vertex, (0, 3), to the x-axis intercepts (−4, 0) and (b, 0). Their direction vectors, measured from the vertex, are ⟨−4, −3⟩ and ⟨b, −3⟩. Because the sides form a right angle, these vectors are perpendicular, so their dot product must equal zero. Applying the dot-product rule gives (−4)(b) + (−3)(−3) = 0. This simplifies to −4b + 9 = 0, and therefore 4b = 9. Dividing by 4 yields b = 9/4. Thus, the option containing 9/4 is correct. This approach is especially efficient for coordinate-geometry questions because perpendicularity can be established directly through the dot product, without first calculating slopes. For a review of the dot-product condition for perpendicular vectors, see Khan Academy's dot-product lesson and Wolfram MathWorld's Dot Product reference.

QUESTION NO: 7 - (SIMULATION)



A scientist collected eight samples (Samples 1-8) from various surfaces in a laboratory to test for the presence of defferent types of bacteria For each of the samples, the graph shows the relative abundance of each of three types of bacteria (Bacteria X, Y, and Z) detected in the sample, as a percentage of all Bacteria X, Y, and Z detected In the sample.

Select the options from each drop-down menu that create the most accurate statement based on the information provided.

ANSWER: See the explanation for the answer

Explanation:

Key selections from the graph:

The greatest relative abundance of **Bacteria X** is in **Sample 1** (100%).
The greatest relative abundance of **Bacteria Y** is tied between **Samples 7 and 8** (60% each).
The greatest relative abundance of **Bacteria Z** is in **Sample 4** (70%).

Thus, if the statement asks for the samples with the greatest proportions of X and Z, select **Sample 1** for Bacteria X and **Sample 4** for Bacteria Z. If it asks about Bacteria Y, select either **Sample 7** or **Sample 8**, since they are tied.

QUESTION NO: 8

Despite the fact that the seeds of certain tropical trees fall mostly around the parent tree, the seeds that land farther from the parent trees of these species have the greatest chance of germinating. One hypothesis is that the effect is caused by rodents eating a larger number of seeds beside the parent tree than seeds in places farther away, but studies have shown that this is not so.

Which of the following, If true, would most help explain the effect described above?

A. Tree sprouts from seeds must compete for moisture and nutrients with some of the plant life in their immediate vicinity.

B. Some tropical trees have winged seeds that tend to prevent them landing beside the parent trees.

C. Certain tropical tree species are preferentially colonized by some types of mammals.

D. Soil microbes that prey on seeds and other biological material from trees of the tropical species in question tend to be densest near those trees.

E. Some plants emit chemicals that are harmful to nearby seeds of other species.

ANSWER: D

Explanation:

Soil microbes that prey on seeds and other biological material from trees of the tropical species in question tend to be densest near those trees directly explains why seeds farther from a parent tree are more likely to germinate. The observed pattern requires a cause that lowers germination success in the area immediately surrounding the parent, even after the proposed explanation involving rodents has been ruled out. If seed-consuming or seed-damaging microbes accumulate most densely near the parent tree, seeds landing there face a greater risk of being attacked before they can germinate. Seeds dispersed farther away would encounter fewer of these microbes and therefore have a higher probability of surviving to germination. This is consistent with the Janzen–Connell hypothesis, an ecological account of how host-specific natural enemies, including pathogens and seed predators, can cause reduced seedling survival near parent plants and promote successful establishment at greater distances. The explanation also fits the question's focus on tropical trees, where distance- and density-dependent effects of natural enemies are widely studied. For background on this mechanism, see the Encyclopaedia Britannica overview of the Janzen–Connell hypothesis and this foundational Janzen study in The American Naturalist.

QUESTION NO: 9

With globalization, companies often save on costs by paying lower wages abroad rather than by enhancing the abilities of their domestic workers, and this helps explain why productivity in many countries has been high over the last decade even as, despite year-to-year variation, domestic wages and job creation have barely grown.

A. even as, despite year-to-year variation, domestic wages and job creation have barely grown

B. despite year-to-year variation, domestic wages and job creation have barely grown

C. even though, though there has been year-to-year variation, domestic wages and job creation have barely grown

D. though domestic wages, despite year-to-year variation, and job creation have barely grown

E. even, as despite year-to-year variation domestic wages and job creation have barely grown

ANSWER: B

Explanation:

despite year-to-year variation, domestic wages and job creation have barely grown correctly and concisely expresses the intended concession: productivity has remained high over the decade notwithstanding the fact that domestic wages and job creation have shown little overall growth. The preposition “despite” properly introduces the noun phrase “year-to-year variation,” while the independent clause that follows—“domestic wages and job creation have barely grown”—states the broader long-term trend. This construction also gives “despite” a clear scope: temporary annual fluctuations do not change the conclusion about minimal growth across the full decade. The plural compound subject “domestic wages and job creation” correctly takes the plural verb “have,” and “barely” appropriately modifies “grown.” The resulting sentence maintains a logical relationship between high productivity and weak domestic wage and job growth without adding an unnecessary subordinate conjunction. For guidance on using prepositions and maintaining clear sentence relationships, see the Purdue OWL overview of prepositions. The Purdue OWL comma rules also discusses punctuation principles relevant to keeping introductory and modifying phrases clear.

QUESTION NO: 10

In a group of 60 investors, 48 purchased a certificate of deposit, 35 purchased shares of stock, and 27 purchased savings bonds. Of the 19 investors in the group who purchased both a certificate of deposit and savings bonds, 12 purchased all three types of investments. If every investor who purchased shares of stock also purchased a certificate of deposit, how many of the investors in the group purchased none of the three types of investments?

A. 0

B. 1

C. 2

D. 3

E. 4

ANSWER: E

Explanation:

4 is correct. Because every investor who purchased shares of stock also purchased a certificate of deposit, the entire shares-of-stock group is contained within the certificate-of-deposit group. Thus, including shares of stock separately would not add any investors beyond those already counted among certificate-of-deposit purchasers. The relevant combined group is therefore the union of the 48 certificate-of-deposit purchasers and the 27 savings-bond purchasers. Their overlap is 19 investors, so inclusion-exclusion gives 48 + 27 − 19 = 56 investors who purchased at least one of the three investment types. The detail that 12 investors purchased all three types is consistent with the overlap information and the containment condition; those investors are already included in both the certificate-of-deposit and savings-bond counts and must not be counted again. Since the full group contains 60 investors, the number who purchased none is 60 − 56 = 4. This uses the standard set-counting principle that the size of a union equals the sum of two set sizes minus their intersection; see GMAT Exam Overview and Khan Academy’s probability and set concepts resources.

QUESTION NO: 11

When placed on the floor of a room, a rectangular rug that is 5 feet wide and 7 feet long covers all of the floor except for a uniformly 2-foot-wide strip on each side of the rug. What percent of the area of the floor is not covered by the rug?

A. Less than 20%

B. More than 20% but less than 40%

C. More than 40% but less than 60%

D. More than 60% but less than 80%

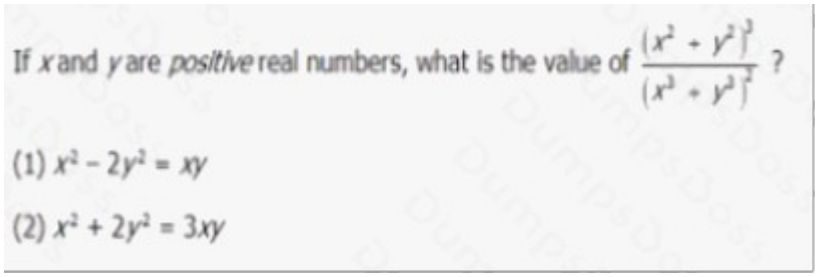
E. More than 80%

ANSWER: D

Explanation:

More than 60% but less than 80% is correct. The 2-foot-wide uncovered border occurs along both opposite sides of each rug dimension. Therefore, the room's width is the rug's 5-foot width plus 2 feet on the left and 2 feet on the right, for a total of 9 feet. Similarly, the room's length is the rug's 7-foot length plus 2 feet at each end, for a total of 11 feet. The floor area is consequently 9 × 11 = 99 square feet. The rug covers 5 × 7 = 35 square feet, leaving 99 − 35 = 64 square feet uncovered. The required percentage is (64/99) × 100, which is approximately 64.6%. That value falls between 60% and 80%. This approach uses the core quantitative skill of translating a uniform border into increases on both sides of each dimension, then comparing the uncovered area with the total area. For additional GMAT quantitative-preparation information, see the official GMAT exam overview. A review of rectangle-area calculations is also available from Khan Academy.

QUESTION NO: 12



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.

ANSWER: A

Explanation:

The correct response is *Statement (1) ALONE is sufficient, but statement (2) alone Is not sufficient.* In a GMAT Data Sufficiency problem, the goal is not necessarily to calculate a numerical value; it is to determine whether the information provided permits one definite answer to the question. This response means that the information in statement (1), considered independently of any other statement, resolves the question conclusively. It also means that statement (2), when considered on its own, still permits more than one possible outcome or otherwise does not establish the requested conclusion with certainty. Therefore, the two statements do not need to be combined: statement (1) already supplies sufficient information. This follows the core Data Sufficiency discipline of testing each statement separately first and judging sufficiency rather than performing unnecessary calculations. GMAT's official exam materials describe the Quantitative section and its problem-solving approach at GMAT Exam Structure. Additional official preparation resources are available through GMAT Exam Preparation.

QUESTION NO: 13

Geraldine: The medical profession claims that it is constantly refining its diagnostic techniques so as to improve its ability to treat those who are ill, but I suspect that this is all Just obfuscation. Anyone who really wants to know why medical diagnoses have increased in recent years need look only at the tremendous amount of money that is made manufacturing, advertising, and distributing drugs.

Which of the following would it be most useful to determine in evaluating Geraldine's explanation?

A. Whether the medical profession's diagnostic techniques have changed significantly in recent years

B. Whether in recent years medical professionals have prescrfoed different medications than they did in years past for certain ailments

C. Whether in recent years those who were prescribed drugs reported that they were satisfied with the treatment they received

D. Whether in recent years diagnoses of ailments treated by nondrug therapies have increased at a more rapid rate than diagnoses of ailments treated by drugs

E. Whether in recent years the amount of money that was made manufacturing, advertising, and distributing drugs was greater than the amount of money that was made by the physicians who diagnosed ailments

ANSWER: D

Explanation:

Whether in recent years diagnoses of ailments treated by nondrug therapies have increased at a more rapid rate than diagnoses of ailments treated by drugs is the most useful information because it directly tests Geraldine's proposed causal explanation. Her claim is not merely that diagnoses and drug-company profits both exist or have both increased; it is that the prospect of drug-related profits explains the increase in diagnoses. If that explanation is accurate, diagnoses involving conditions for which drugs are sold should be especially associated with the overall rise in diagnoses. Comparing the growth rate of drug-treated diagnoses with the growth rate of diagnoses treated without drugs provides evidence that bears on precisely that expected relationship. This is a standard causal-evaluation approach in GMAT Critical Reasoning: identify what pattern should be observable if the asserted cause is genuinely driving the stated effect, then assess whether the relevant comparison supports that pattern. The comparison is particularly valuable because it separates diagnoses connected to the alleged financial incentive from those outside it. For general guidance on the Critical Reasoning skills tested in the GMAT Verbal section, see GMAT Exam Content and About the GMAT Exam.

QUESTION NO: 14

The passage most clearly implies that the skeptics mentioned in the third paragraph assume that

A. chariots and wagons were invented north of the Black Sea

B. there would be evidence that chariots existed earlier than 5,500 years ago if they existed about 9,000 years ago

C. chariots existed about 9,000 years ago

D. many languages with similar vocabularies do not share recent common ancestors

E. pastoralist speakers of proto-Indo-European did not spread into Anatolia

ANSWER: B

Explanation:

The skeptics' position depends on treating the archaeological record as a meaningful test of the proposed earlier date. Their reasoning is conditional: if chariots had existed about 9,000 years ago, material evidence of them should be found from substantially earlier than 5,500 years ago. Thus, the absence of such earlier evidence is relevant to their skepticism only because they assume that an invention or technology widespread enough to support the passage's historical claim would leave identifiable archaeological traces. This is an implied assumption rather than a statement that chariots actually existed 9,000 years ago. In GMAT Reading Comprehension inference questions, the correct choice is the conclusion or unstated premise most strongly supported by the relationships described in the passage, not an unsupported detail or an extreme restatement. The completed conditional wording preserves the logical connection between the claimed early date and the

evidence the skeptics expect to see. See the GMAT's overview of Verbal reasoning and Reading Comprehension skills at GMAT Exam Format and its preparation guidance at Prepare for the GMAT Exam.

QUESTION NO: 15

An employee of Store Z purchased an item at Store Z. The item was on sale at -»% off its list price and the employee also received an employee discount of i-*%. If no taxes were Involved, what net percent discount did the employee receive off the list price of the Item?

(1) The employee paid $181.25 less for the item than its list price.

(2) The employee discount was applied before the sale discount was applied.

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.

ANSWER: E

Explanation:

Statements (1) and (2) TOGETHER are NOT sufficient. Let the list price be P, the sale-discount rate be s, and the employee-discount rate be e, expressed as decimals. Applying both discounts produces a final price of $P(1 - s)(1 - e)$. Therefore, the net discount as a percentage of list price is $1 - (1 - s)(1 - e)$, or equivalently $s + e - se$. The dollar reduction in statement (1) gives only the relationship between the unknown list price and the unknown net discount: $P[s + e - se] = 181.25$. It does not establish a unique percentage because different list prices can yield the same dollar reduction at different discount rates. Statement (2) does not add numerical information: multiplication is commutative, so applying the employee discount first or the sale discount first leads to the same final-price factor, $(1 - e)(1 - s)$. Consequently, even when both statements are used, the actual net percentage discount cannot be determined uniquely. This is a standard GMAT Data Sufficiency conclusion: the task is to determine whether the information fixes one definite answer, not to calculate from an assumed list price. See the GMAT Exam overview and GMAT preparation resources.

QUESTION NO: 16

Which of the following is the most likely reason that the author mentions the work o* the astronomers in 1998 (see highlighted text)?

A. To counter the common view among astronomers in 1998 that no planets orbited around HR 8799

B. To show that Earth based telescopes are generally more accurate than is the Hubble telescope

C. To help explain why scientists felt it necessary to archive the Hubble images of HR8799

D. To highlight the potential value that the new technique could have for Researchers

E. To emphasize mistakes researchers made in 1998 when examining the Hubble images of HR 8799

ANSWER: D

Explanation:

"To highlight the potential value that the new technique could have for Researchers" is correct because the reference to the astronomers' earlier work serves as an illustration of what improved image-analysis methods can accomplish. Images that initially did not yield a detectable planetary signal can become scientifically useful when researchers apply a more capable technique to separate faint objects from the overwhelming glare of a host star. Thus, the 1998 observations provide concrete

evidence that the technique may reveal information that was present in existing data but inaccessible with the analytical tools available at the time. The point is not merely historical: it demonstrates a practical benefit for astronomical research. A successful reexamination of archival observations suggests that researchers can revisit stored telescope data, potentially identify previously unseen exoplanets or other faint features, and extend the scientific return from observations without needing entirely new data collection. This broader value of archival reanalysis is consistent with NASA's description of Hubble's extensive science archive and with NASA's overview of methods used to detect exoplanets. See the Mikulski Archive for Space Telescopes and NASA's guide to ways of finding exoplanets.

QUESTION NO: 17

Five managers are to be seated around a circular table. If two particular managers must not sit next to each other, how many different seating arrangements are possible?

A. 6

B. 10

C. 12

D. 18

E. 24

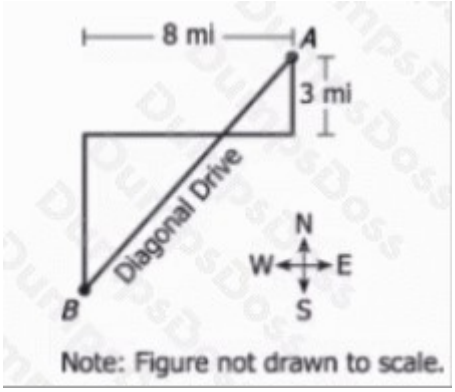
ANSWER: C

Explanation:

12 is correct. The number of ways to arrange 5 people around a circular table is (5 − 1)! = 24. To count the arrangements in which the two particular managers sit together, treat them as one unit. There are then 4 units to arrange around the table, giving (4 − 1)! = 6 circular arrangements. The two managers within the unit can be ordered in 2 ways, so 2(6) = 12 arrangements have those managers adjacent.

Subtracting the adjacent arrangements from all arrangements gives 24 − 12 = 12 arrangements in which the two managers do not sit next to each other. This uses circular-permutation and complementary-counting principles.

QUESTION NO: 18



As shown in the diagram, Diagonal Drive, which is straight and level, connects A and B. While Diagonal Drive is closed for repairs, drivers starting at A must take a detour and travel 3 miles due south, then 8 miles due west, and finally due south to arrive at B. How many miles long is Diagonal Drive from ,4 to Bl

(1) Before Diagonal Drive was closed, driving on it from A to 5 at an average speed of 30 miles per hour took 20 minutes.

(2) The total distance drivers drive south on the detour is 4 miles less than the length of Diagonal Drive between A and B.

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.

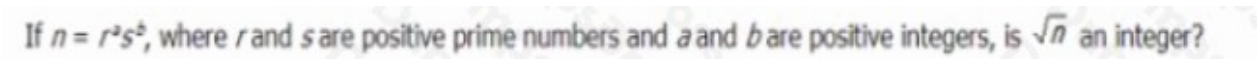
ANSWER: D

Explanation:

EACH statement ALONE is sufficient. Statement (1) directly determines the length of Diagonal Drive through the distance formula: distance equals rate multiplied by time. Twenty minutes is one-third of an hour, so traveling at 30 miles per hour for that time gives a distance of 10 miles. Therefore, this statement alone answers the question uniquely.

Statement (2) also determines the length uniquely when combined with the fixed geometry in the question stem. Let the total southward portion of the detour be s miles. Since the detour includes an 8-mile westward displacement, Diagonal Drive is the hypotenuse of a right triangle, so its length d satisfies $d^2 = s^2 + 8^2$. Statement (2) gives $d = s + 4$. Substitution yields $(s + 4)^2 = s^2 + 64$, giving $s = 6$ and $d = 10$. Thus, statement (2) alone is sufficient as well. This follows the GMAT data-sufficiency standard of determining whether the information permits one definite answer, rather than requiring every detail of the route. See the GMAT Exam overview and the Pythagorean theorem reference.

QUESTION NO: 19



1) A +b is an even integer.

2) ab is an even integer.

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.

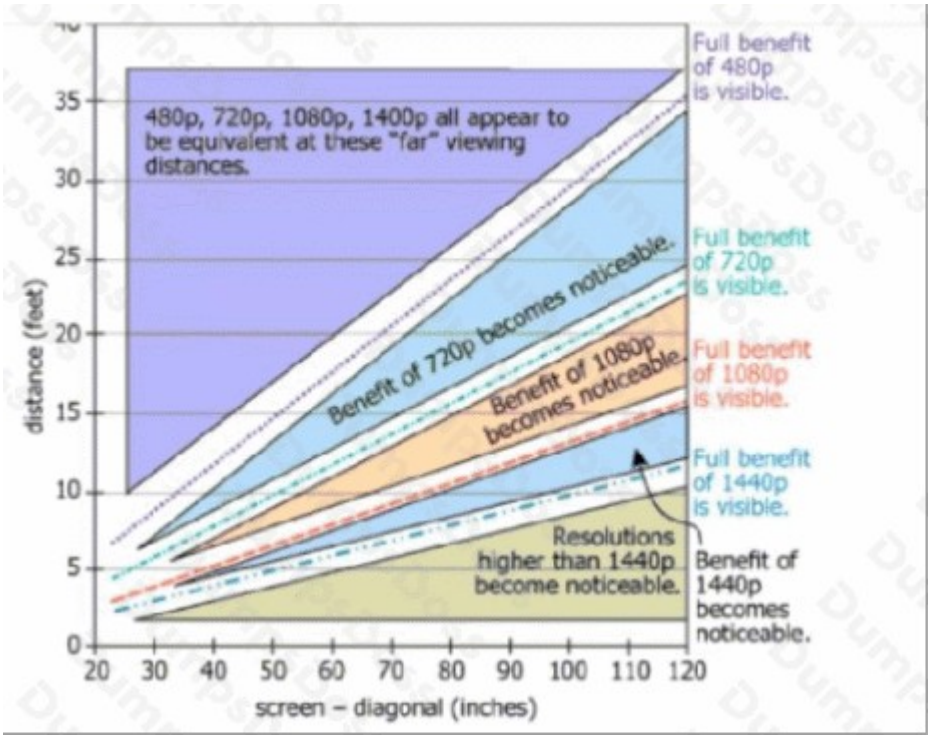
E. Statements (1) and (2) TOGETHER are NOT sufficient.

ANSWER: B

Explanation:

“Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.” is correct. In a data-sufficiency problem, the task is not to calculate a particular value; it is to decide whether the information provided produces a definite answer to the question in the image. The condition that ab is an even integer directly provides the required determinate parity information for the question, so no additional information from the first statement is needed. An even product has the relevant established status regardless of the particular numerical values of a and b, provided they meet the stated condition. Therefore, statement (2) independently resolves the question and is sufficient under GMAT data-sufficiency methodology. GMAT questions require test takers to assess whether the available facts are enough to answer conclusively, rather than to assume unstated values or seek more numerical detail than the prompt requires. See the GMAT’s official preparation resources at mba.com and its overview of the exam’s quantitative reasoning skills at GMAT Exam About page.

QUESTION NO: 20



Television picture quality improves as resolution increases. However, the resolution at which a given improvement in resolution becomes visible varies with the distance of

the viewer from the screen. As a viewer moves closer to the screen, a given improvement in resolution eventually becomes noticeable, finally conferring its “full benefit” at

a point at which moving closer would not improve the viewing experience.

On the graph, 480p, 720p, 1080p, and 1440p represent four common degrees of resolution: greater numbers indicate greater numbers of pixels on the screen and thus

greater resolution. Shaded portions show the distances at which these resolutions become noticeable, while the broken lines show the maximum distances at which a

viewer with normal eyesight would be expected to experience full benefit—all as a function of screen size. For each resolution and screen size shown, there is a small gap

between the maximum distance for full benefit from the resolution and the minimum distance for noticeable benefit from the next higher resolution.

(Note: 3 feet is roughly 1 meter, and 1 inch is roughly 2.5 centimeters.)

Assuming that the information contained in the graphic correctly applies to all viewers, select from the drop-down menus the options making the statements most

accurate.

For a viewer sitting 10 feet away from a 40-inch screen, the greatest resolution at which she might notice an improvement over the lesser resolutions is 720p ▼.

For a viewer observing a 90-inch screen and walking toward it, the benefit of 720p over 480p becomes noticeable at about 25 ▼ feet from the screen.

A. 720p25

ANSWER: A

Explanation:

The correct selection is **720p25**. The graphic must be read by matching the indicated screen-size value with the relevant resolution band and then comparing the viewer’s distance with the broken-line threshold for that resolution. A shaded region identifies viewing distances at which the improvement associated with that resolution is noticeable. The corresponding broken line identifies the farthest viewing distance at which a viewer with normal eyesight receives the resolution’s full

benefit. Thus, the 720p and 25 selection is the one supported by the graph's relationship among screen size, viewing distance, and resolution. This task tests careful extraction of a conditional relationship from a visual display rather than calculation from an external formula. The stated assumption that the graphic applies to all viewers means the conclusion should be based solely on the displayed thresholds, without adjusting for differences in eyesight or display technology. This type of graphics-based reasoning is consistent with the GMAT's focus on interpreting quantitative and graphical information accurately. See the official GMAT exam overview and GMAC's GMAT preparation resources.

QUESTION NO: 21

At a certain hospital, the number of babies born each day of the year 2002 was recorded. If 20 percent of the recorded numbers were greater than 7, was the median of the recorded numbers less than 5 ?

(1) Of the recorded numbers that were 7 or less, 75 percent were less than 5.

(2) Of the recorded numbers that were 5 or greater, 50 percent were 7 or less.

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

B. Statement (2) ALONE Is sufficient, but statement (1) atone 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.

ANSWER: D

Explanation:

"EACH statement ALONE is sufficient." is correct. Because 2002 was not a leap year, there are 365 recorded daily birth counts. Twenty percent of 365 is 73, so 73 recorded numbers are greater than 7 and the remaining 292 are 7 or less. The median is the 183rd number when all 365 daily counts are arranged in increasing order. Thus, the median is less than 5 precisely when at least 183 recorded numbers are less than 5.

Using the first statement alone, 75 percent of the 292 values that are 7 or less are less than 5. That is 0.75 × 292 = 219 values, which exceeds 183; therefore, the median must be less than 5.

Using the second statement alone, let the number of values from 5 through 7 be x. The values that are 5 or greater consist of x values that are 7 or less and 73 values greater than 7. Since 50 percent of these values are 7 or less, x = 73. Therefore, 292 − 73 = 219 values are less than 5, again forcing the median to be less than 5. This follows the GMAT Data Sufficiency standard of deciding whether each statement determines a definite answer; see GMAT Exam Format and GMAT Preparation.

QUESTION NO: 22

If $x \neq 5$, then $y = \frac{2x^2 - 9x - 5}{x - 5}$ is equivalent to which of the following?

A. y =x-5

B. y =x+5

C. y =2x-1

D. y =2x+1

E. y =2x-5

ANSWER: D

Explanation:

The equation **y = 2x + 1** is the correct linear equation because it has the slope and vertical intercept shown by the line. In slope-intercept form, *y = mx + b*, the coefficient *m* describes the line's slope and the constant *b* identifies the y-intercept. Here, the slope is 2: for every increase of 1 in x, y increases by 2. The y-intercept is 1, meaning the line crosses the y-axis at the point (0, 1). These two features uniquely determine the equation. For example, beginning at (0, 1) and moving one unit to the right gives the point (1, 3), which satisfies y = 2(1) + 1. Likewise, moving one unit left gives (-1, -1), also consistent with the same line. On GMAT quantitative questions, translating a graph into an equation requires identifying these visual features accurately and expressing them in the standard slope-intercept relationship. GMAC describes the Quantitative Reasoning section as assessing problem-solving and data-sufficiency skills using foundational mathematical concepts; see GMAC's Quantitative Reasoning overview. A concise review of slope-intercept form is also available from Khan Academy.

QUESTION NO: 23

A certain company's revenue r, in dollars, from the sale of n shirts is given by the equation r = n 2 + 10n – 5. What is the company's revenue from the sale of 10 shirts?

A. $105

B. $125

C. $145

D. $195

E. $205

ANSWER: D

Explanation:

The company's revenue from the sale of 10 shirts is **$195**. The expression "n 2" is understood as *n* squared, so the revenue rule is r = n² + 10n − 5. Substitute 10 for n: r = 10² + 10(10) − 5. Squaring 10 gives 100, and multiplying 10 by 10 gives another 100. Therefore, r = 100 + 100 − 5 = 195. Because r is defined in dollars, the resulting value is $195. This is a standard function-evaluation task: replace the variable with the specified input value, apply the exponent before addition and subtraction, and retain the units given in the question. The GMAT Quantitative section assesses problem-solving using foundational arithmetic and algebra skills, including evaluating algebraic expressions accurately. See the GMAT overview at MBA.com: About the GMAT Exam and the algebra review of evaluating expressions at Khan Academy: Algebraic expressions and equations.

QUESTION NO: 24

Is the integer N the square of a positive integer?

(1) N has an odd number of different positive integer divisors.

(2) Each of 9 and 25 is a divisor of N.

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.

ANSWER: A

Explanation:

Statement (1) ALONE is sufficient but statement (2) alone is not sufficient. A positive integer is a perfect square exactly when it has an odd number of distinct positive divisors. The reason is that divisors ordinarily occur in paired products: if d divides N, then N/d also divides N. For a nonsquare, these two divisors are different, so every divisor belongs to a pair and the total number is even. If N is a square, however, its positive square root pairs with itself rather than with a different divisor, leaving one unpaired divisor and producing an odd total. Therefore, knowing that N has an odd number of different positive integer divisors answers the question definitively: N must be the square of a positive integer. This standard divisor-pairing result is also reflected in the divisor-count formula: a number has an odd number of divisors precisely when all exponents in its prime factorization are even. See Wolfram MathWorld: Divisor Function and Divisor function.

QUESTION NO: 25

Despite his renowned contributions to resolving archaeological questions, he was unable to provide hardly any insight into reconciling the conflicting linguistic and cultural evidence with respect to the expansion of agriculture.

A. hardly any insight into reconciling the conflicting linguistic and cultural evidence with respect to the expansion of agriculture

B. hardly any insight about reconciling the conflicting linguistic and cultural evidence on agriculture expanding

C. much insight into how the conflicting linguistic and cultural evidence about the expansion of agriculture could be reconciled

D. much insight to reconciling the conflicting linguistic and cultural evidence about how agriculture expanded

E. hardly any insight for how the conflicting linguistic and cultural evidence about agriculture's expansion could reconcile

ANSWER: C

Explanation:

The correct completion is “much insight into how the conflicting linguistic and cultural evidence about the expansion of agriculture could be reconciled.” The phrase “was unable to provide much insight” expresses the intended negative meaning clearly: despite the person’s recognized success in addressing archaeological issues, he could not offer substantial help in resolving this particular evidentiary conflict. It also uses the idiomatic construction *insight into how* to introduce the question of the method or process by which the evidence might be brought into agreement. The passive modal construction “could be reconciled” is appropriate because the linguistic and cultural evidence is the material being reconciled, rather than the actor performing the reconciliation. Finally, “about the expansion of agriculture” precisely identifies the subject to which both bodies of evidence relate. This revision improves logical clarity and grammatical idiom while preserving the sentence’s intended contrast between notable prior contributions and limited insight on this specific question. GMAT Verbal reasoning assesses careful interpretation of written material and effective expression; see the GMAT Verbal Reasoning overview. For guidance on avoiding unclear negatives and maintaining sentence clarity, see the Purdue OWL discussion of negatives.

QUESTION NO: 26

Eric bought 7 T-shirts, each at the retail price of $6.91. If he paid a 6% sales tax on the total of the retail prices of the 7 T-shirts, what was the total amount, including tax, he paid for the T-shirts?

A. $7.32

B. $48.37

C. $48.43

D. $48.79

E. $51.27

ANSWER: E

Explanation:

$51.27 is correct. First, calculate the total retail price of the seven T-shirts: $6.91 multiplied by 7 equals $48.37. The 6% sales tax applies to that entire pre-tax total, so the tax is $48.37 multiplied by 0.06, which equals $2.9022. Adding the tax to the retail total gives $48.37 + $2.9022 = $51.2722. Because money is expressed to the nearest cent, this amount rounds to $51.27. Equivalently, the total including a 6% tax can be calculated in one operation by multiplying the retail total by 1.06: $48.37 × 1.06 = $51.2722, which again rounds to $51.27. This approach follows the standard GMAT quantitative practice of translating a percentage increase into a decimal multiplier and retaining sufficient precision until the final monetary rounding step. For additional preparation guidance on GMAT quantitative reasoning and problem solving, see the GMAT Quantitative Reasoning overview and the official GMAT Exam page.

QUESTION NO: 27

Because of the positive correlation across animal species between body size and home range size, researchers suspected that body size of female mallards (a species of duck) may influence their home range size. The researchers also reasoned that younger females may be forced into less suitable habitats by older females competing with them for optimal areas, with the younger females compensating by having larger home ranges. However, their research supported neither suspicion. The failure to detect variation of range size according to body size may be due to other, undetermined mallard attributes (for example, body condition) that may have been a significant factor affecting home range size. The fact that most yearling females can breed may help to explain why the expected age effect was not confirmed, since home range size may be affected by breeding capability.

The researchers did find, however, that home range size of females was Inversely related to the percentage of the study area composed of seasonal or semipermanent wetlands. This may have been because of reduced competition for breeding space within the species when more of the wetlands were present. They also found home range size to decrease somewhat as the percentage of wood-shrub habitat increased, suggesting that reduction in visual contact among mallard pairs may reduce interaction and thus reduce competition among breeding pairs.

The passage most strongly suggests which of the following about mallard competition?

A. Greater competition among mallards sometimes results in home ranges of greater size.

B. The more competition there is among mallards, the lesser the quality of habitat occupied by young female mallards.

C. The greater the amount of wetlands that are present, the greater the competition among mallards.

D. The greater the amount of wood-shrub habitat that is present, the greater the competition among mallards.

E. Larger female mallards have greater success at competing for habitat than do smaller female mallards.

ANSWER: A

Explanation:

Greater competition among mallards sometimes results in home ranges of greater size. The passage supplies two linked observations that support this relationship. First, as the proportion of seasonal or semipermanent wetlands increases, female home range size decreases; the researchers suggest that the additional wetlands reduce competition for breeding space. This supports the inference that when competition is greater, females may require larger ranges. Second, as wood-shrub habitat increases, home range size also decreases. The passage connects that reduction to diminished visual contact, interaction, and competition among breeding pairs. Together, these findings provide converging evidence for an association in which reduced competition corresponds with smaller home ranges, making the converse statement about greater competition and greater range size the strongest supported conclusion. The wording “sometimes” appropriately reflects that the passage reports observational relationships and proposed mechanisms rather than a universal rule applying in every circumstance. This is a standard GMAT Critical Reasoning task: select the conclusion most directly supported by the evidence given, without extending the evidence beyond its scope. See the GMAT’s official preparation guidance and its overview of GMAT exam skills.

QUESTION NO: 28

Under United States law, a distinctive package design can be legally protected against copying. Lorex shampoo, a leading brand, is packaged in a triangular-shaped bottle with a gold label. A major pharmacy chain has introduced a similar, less expensive shampoo in similarly shaped bottles with plain black-and-white labels carrying the chain's name. Though the triangular shape is distinctive, the manufacturer of Lorex has not legally challenged its use for the chain's shampoo.

Which of the following, if true, provides the strongest reason for the manufacturer of Lorex not to challenge the chain's use of the triangular package design?

A. The manufacturer of Lorex depends for sales on the willingness of the chain to stock Lorex and other of the manufacturer's products.

B. The black-and-white labeling of the chain's shampoo indicates to the consumer that irrelevant expense has been spared in order to bring the product to the consumer at lower cost.

C. The cost of manufacturing the chain's shampoo is substantially lower than the cost of manufacturing Lorex.

D. Lawsuits brought for the purpose of protecting distinctive package designs are generally successful.

E. The manufacturer of Lorex also manufactures other shampoos, and those shampoos are not sold in triangular-shaped bottles.

ANSWER: A

Explanation:

The manufacturer of Lorex depends for sales on the willingness of the chain to stock Lorex and other of the manufacturer's products. This provides a direct and substantial business reason not to bring a legal challenge: even if Lorex could potentially protect its distinctive triangular package design, suing a major retail customer could damage an economically valuable commercial relationship. The chain might reduce shelf space, discontinue Lorex, or become less willing to carry the manufacturer's other products. Because the manufacturer depends on the chain for sales, those possible consequences can outweigh the benefit of trying to stop the chain's use of a similar bottle shape. The point is not whether Lorex has a possible legal claim, but why it would choose not to assert one. Trademark and trade-dress rights are business assets, and enforcement decisions commonly require weighing the likely value of litigation against commercial costs and risks. The U.S. Patent and Trademark Office explains that trade dress may include product packaging when it identifies the source of goods: USPTO—What is a trademark?. The Lanham Act also supplies the federal framework for claims involving likely confusion in the use of marks and trade dress: 15 U.S.C. § 1125.

QUESTION NO: 29

Which of the following, if true, would most undermine the reasoning offered for the claim that gray markets can in certain conditions lead to increased profits among authorized retailers?

A. More consumers have become price-sensitive over the last ten years and this trend will continue for the foreseeable future.

B. Gray markets typically remain strong even in markets where authorized retailers have introduced service enhancements.

C. Price wars among authorized retailers, triggered by the appearance of gray markets when few, if any, consumers are price-insensitive, lead to a cycle of increasing price reductions that severely narrow profit margins.

D. Authorized retailers who are competing for the business of price-insensitive consumers often become involved in a cycle of expensive service enhancements that significantly narrow profit margins.

E. Manufacturers who fear that gray marketing will tarnish their brand names sometimes subsidize advertising for authorized retailers, thereby narrowing the manufacturers' profit margins.

ANSWER: D

Explanation:

Authorized retailers who are competing for the business of price-insensitive consumers often become involved in a cycle of expensive service enhancements that significantly narrow profit margins. This most undermines the claim because the proposed profit benefit of a gray market depends on authorized retailers being able to focus on customers who are less sensitive to price and therefore willing to pay more for the authorized channel's added service, assurance, or convenience. That reasoning assumes that serving these remaining customers will yield sufficiently high margins to increase profits. If competition for price-insensitive customers instead prompts authorized retailers to repeatedly add costly service features, their costs can rise enough to offset the higher prices or higher-margin sales they expect to earn. Consequently, the key

mechanism connecting gray-market segmentation to greater authorized-retailer profit is no longer dependable: the retailers may retain a desirable customer segment yet still experience reduced margins. This is a direct attack on the argument's profitability assumption, rather than merely a statement about market conditions or a different party's profits. In GMAT-style Critical Reasoning, a strong undermining statement weakens the connection between the evidence or mechanism offered and the conclusion. See the GMAT's exam-content overview and its preparation guidance.

QUESTION NO: 30

The scientists say the newly discovered caverns range from 330 to 825 feet wider from at least 425 feet deep, and have named them after family members and friends.

A. wide, from at least 425 feet deep, and

B. wide and are at least 425 feet deep, and they

C. wide, are at least 425 feet deep, and

D. wide, while being at least 425 feet deep and they

E. wide and at least 425 feet deep and

ANSWER: B

Explanation:

The correct completion is "wide and are at least 425 feet deep, and they" because it produces a complete, clear sentence with logically parallel descriptions of the caverns. The phrase "range from 330 to 825 feet wide" correctly states the caverns' width, while "are at least 425 feet deep" supplies a second predicate describing their depth. Both predicates share the subject "the newly discovered caverns," so the construction efficiently presents two measurements without changing subjects or leaving an incomplete modifier. The following independent clause, "they have named them after family members and friends," clearly returns to "the scientists" as its subject. The pronoun "they" makes that shift explicit and avoids suggesting that the caverns performed the act of naming. This structure also preserves the intended meaning: scientists report the caverns' dimensions and then state that the scientists named the caverns. GMAT Verbal questions test the ability to identify grammatically sound, precise, and logically constructed sentences, including correct subject–verb relationships and parallel structure. See the GMAT exam format overview and the Purdue OWL guide to parallel structure.

QUESTION NO: 31

The use o* bets in the 1998 study was intended to deflect objections that would be based on which of the following Issues?

A. The possibility of research subjects interpreting "probability" so as not to conform to the mathematical principles, and their interpretation of "and" to include additional information

B. The possibility of research subjects interpreting "probability" so as not to conform to the mathematical principles, and the lack of motivation of some of the subjects

C. Failure of research subjects to recognize that adolescent smoking could decrease even when the cigarette tax remains the same

D. The interpretation of "and" by some study subjects to include additional information, and their lack of concentration on the assigned tasks

E. The fact that some of the research subjects did not commit the conjunction fallacy

ANSWER: A

Explanation:

The possibility of research subjects interpreting "probability" so as not to conform to the mathematical principles, and their interpretation of "and" to include additional information is correct. Research on the conjunction fallacy has prompted an important methodological concern: participants may treat a request for a "probability" judgment as a request for plausibility,

representativeness, or ordinary-language likelihood rather than as a mathematical comparison of event probabilities. A second concern is that, in ordinary conversation, a conjunction can be understood as conveying more than the literal intersection of two events; adding “and” may be taken to supply a richer description or additional implied information. Using bets frames the task as a choice between payoffs contingent on clearly specified outcomes. That format is intended to make the relevant comparison operational and decision-based, rather than dependent on a participant’s informal interpretation of probability language or conversational implications of a conjunction. The underlying mathematical rule is that a conjunction cannot be more probable than either of its component events. The classic experimental discussion of this judgment pattern appears in Tversky and Kahneman’s Journal of Experimental Psychology article; further background on the principle is available from the Stanford Encyclopedia of Philosophy’s discussion of logic and probability.

QUESTION NO: 32

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 sokf by Jan's 5 friends is 12.

A. Statement (I) 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.

ANSWER: D

Explanation:

The correct conclusion is: **EACH statement ALONE is sufficient.** With five friends’ sales arranged from least to greatest, a median of 18 means the third value is 18. Therefore, the first, second, and third values are all 18 or fewer. Since Jan sold 20 bars, he sold more than each of those at least three friends. Thus, the median information alone gives a definite “yes” answer.

An average of 12 for five friends means that their combined sales total 60 bars. If fewer than three friends had sold fewer than 20 bars, then at least three friends would each have sold 20 or more bars. Those three friends alone would total at least 60 bars, while the remaining two friends must each have sold at least one bar. The total would therefore exceed 60, contradicting the stated average. Consequently, at least three friends sold fewer than 20 bars, so Jan necessarily sold more than at least three friends. This applies the GMAT Data Sufficiency principle that a statement is sufficient when it yields one definite answer to the question. See GMAT Exam information from GMAC and GMAT preparation resources.

QUESTION NO: 33 - (HOTSPOT)

Archaeologists have excavated two ancient sites, Site A and Site B, each containing bowls and dishes. A third site containing similar vessels (bowls and dishes), Site C, Is known to have existed but has not yet been located. The vessels have been dated to three successive 40-vear-long time periods (Mil).

The dishes that were found are small and plain and were made primarily for everyday use. For each site, the average population at the site for a period is known to be roughly proportional to the number of dishes found that were dated to that period.

The bowls are more elaborate, decorated In either a curvy or a rectilinear style. They were made primarily for ritual use. The numbers of bowls found indicate the level of wealth of the site's inhabitants during the period to which the bowls were dated (with greater numbers indicating greater wealth).

Documents found at Sites A and B establish that exactly 18 of the dishes found at Site A were manufactured at Site C; otherwise, all of the vessels were made at the sites where they were found.

For each of Sites A through C, select Yes If the Information provided Indicates that the population at that site was both greater in Period II than Period I and greater in Period III than in Period II. Otherwise, select No.

ANSWER:

Explanation:

Population is determined from dishes rather than bowls, because the prompt states that the average population during a period is roughly proportional to the number of dishes dated to that period. Thus, the relevant comparison for each site is whether its dish total rises from Period I to Period II and then rises again from Period II to Period III. Since some dishes located at Site A were manufactured at Site C, those 18 dishes must be attributed to Site C when determining the populations of the sites where the vessels were made. This attribution is essential: finding an object at a site does not override the stated evidence about its manufacturing site.

After using the period dates and assigning the documented Site C-manufactured dishes to Site C, the dish counts for Site A form an increasing sequence across the three periods. Site A therefore had a greater population in Period II than in Period I and a greater population in Period III than in Period II. The dish counts attributed to Site C also increase over both period-to-period comparisons, so Site C satisfies the same two-part population condition. Site B does not satisfy both required increases, so it is not identified as having a population that rose in each successive period.

This reasoning follows the standard use of proportional measures: when one quantity is proportional to another, the direction of change is preserved. A larger appropriately attributed number of dishes indicates a larger average population for that period. For a general explanation of proportional relationships, see Khan Academy's proportional-relationships review.

QUESTION NO: 34

One year ago a window washing service charged S100 for setup and an additional $30 per hour for on-site washing. This year the company charges $20 for setup and an additional $50 per hour for on-site washing. Which of the following is equivalent to the percentage change from last year to this year that the company charges for setup and x hours of on-site washing?

A)

$100\left(\frac{3x+10}{2x-8}\right)\%$

B)

$200\left(\frac{x-4}{3x+10}\right)\%$

C)

$200\left(\frac{x-4}{5x+2}\right)\%$

D)

$200\left(\frac{4-x}{3x+10}\right)\%$

E)

$200\left(\frac{4-x}{5x+2}\right)\%$

A. Option A

B. Option B

C. Option C

D. Option D

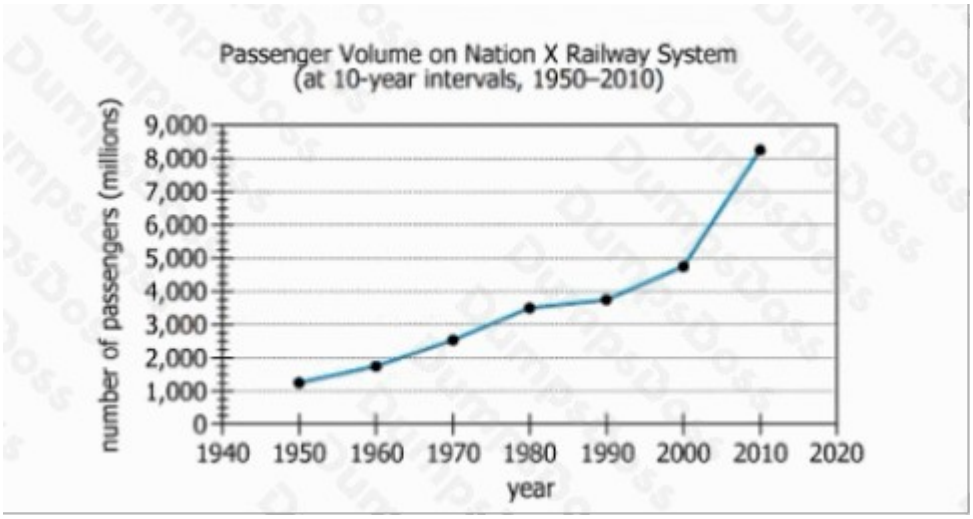
E. Option E

ANSWER: D

Explanation:

The correct expression is the one represented by *Option D*. The prior-year charge for setup and *x* hours of washing is \(100+30x\), because the fixed setup charge is added once and the hourly charge is multiplied by the number of hours. The current-year charge is \(20+50x\). Percentage change must be calculated relative to the original, or prior-year, amount: \(\frac{\text{new} - \text{old}}{\text{old}}\times100\%\). Substituting the two total charges gives \(\frac{(20+50x)-(100+30x)}{100+30x}\times100\%\). Combining like terms in the numerator yields \(\frac{20x-80}{100+30x}\times100\%\), which can equivalently be written as \(\frac{2x-8}{3x+10}\times100\%\). This expression properly accounts for both changes simultaneously: the setup fee decreases while the hourly fee increases. It also uses the earlier total charge as the denominator, as required by the meaning of a change “from last year to this year.” For GMAT quantitative questions, translating the wording into algebraic expressions before simplifying is a reliable approach; see the GMAT Exam overview and Khan Academy’s percent-change review.

QUESTION NO: 35 - (SIMULATION)



At 10-year intervals from 1950 through 2010, the graph shows the total number of passengers, in millions, on the railway system of Nation X. From each drop-down menu, select the option that creates the most accurate statement based on the information provided.

From 1950 to 2010, the total number of passengers increased by approximately Select... %.

The total number of passengers more than doubled over the 20-year period from Select... .

ANSWER: See the explanation for the answer

Explanation:

Select:

500%
1990 to 2010

The passenger total rises from approximately 1,300 million in 1950 to approximately 8,300 million in 2010. The increase is about 7,000 million, or roughly `(7,000 / 1,300) × 100 ≈ 540%`, which is best approximated as **500%**.

From 1990 (about 3,800 million) to 2010 (about 8,300 million), passenger volume rises to more than twice its 1990 level.

QUESTION NO: 36

Mark Twain's financial troubles stemmed from a lavish lifestyle and poor investments in such a dubious invention as a "patent baby clamp," designed to prevent infants from

kicking off their blankets, and an extraordinarily complicated and undependable typesetting machine.

A. poor investments in such a dubious invention as

B. poor investments in such dubious inventions as

C. included such poor investments as in the dubious inventions of

D. such poor investments, as in the invention of

E. such poor investments in dubious inventions as

ANSWER: B

Explanation:

The correct wording is **"poor investments in such dubious inventions as"** because it expresses the intended comparison idiomatically and preserves logical number agreement. The phrase *such … as* introduces examples belonging to the category named before it. Here, Twain made investments in more than one invention: the patent baby clamp and the typesetting machine. Therefore, the category must be plural: *dubious inventions*. The two examples that follow are then coordinated as members of that plural category: a baby clamp and a typesetting machine.

This construction also makes the sentence's main structure easy to follow. Twain's financial troubles "stemmed from" two parallel sources: a lavish lifestyle and poor investments. Within the second source, the prepositional phrase "in such dubious inventions as" precisely identifies the kind of investments without interrupting the relationship between the plural investments and their two illustrative inventions. GMAT-style Sentence Correction rewards wording that is grammatical, concise, and logically precise, especially when comparisons and examples must agree in number. For general guidance on GMAT Verbal and Sentence Correction skills, see the GMAT Exam Structure and the official GMAT preparation resources.

QUESTION NO: 37

The length of the longest thin rigid rod that can fit inside a right circular cylindrical can is 25 inches. If the can has depth 20 inches, which of the following is closest to the volume of the can in cubic inches?

A)

$\frac{225\pi}{4}$

B)

225π

C)

450π

D)

$1{,}125\pi$

E)

$4{,}500\pi$

A. Option A

B. Option B

C. Option C

D. Option D

E. Option E

ANSWER: D

Explanation:

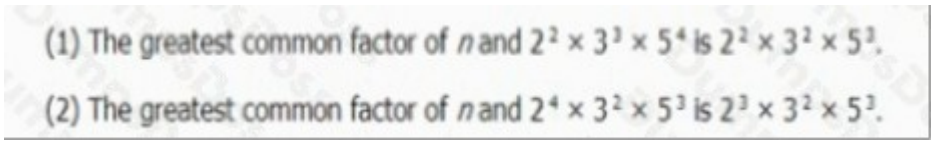
The longest rod that fits in a right circular cylinder runs from a point on one edge of a base to the diametrically opposite point on the other base. Its length is therefore the diagonal of a rectangle whose dimensions are the cylinder's depth and diameter. Applying the Pythagorean theorem gives $\text{diameter}^2 + 20^2 = 25^2$. Thus, the diameter is 15 inches and the radius is 7.5 inches.

The volume of a cylinder is $\pi r^2 h$. Substituting the radius and depth gives $\pi(7.5)^2(20) = 1{,}125\pi$, which is approximately 3,534 cubic inches. Therefore, the value represented by **Option D** is the closest volume. This approach combines the three-dimensional maximum-length condition with the standard cylinder-volume formula. For a review of using the Pythagorean

theorem to find a diagonal, see Khan Academy. The cylinder volume relationship is summarized by Wikipedia's cylinder geometry reference.

QUESTION NO: 38

The only prime factors of the positive integer n are 2,3, and 5. What te the value of n ?



A. Statement (1) ALONE Is sufficient, but statement (2) alone Is not sufficient.

B. Statement (2) ALONE Is sufficient, but statement (1) atone 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 ate NOT sufficient.

ANSWER: B

Explanation:

"Statement (2) ALONE Is sufficient, but statement (1) atone Is not sufficient." is correct. Since the only prime factors of *n* are 2, 3, and 5, *n* can be represented in the form $2^a \times 3^b \times 5^c$, where the exponents are nonnegative integers (and, under the usual wording that these are the only prime factors, the relevant primes occur in the factorization). The information in statement (2) supplies enough restriction on that prime-factor form to determine one unique set of exponents. Once those exponents are fixed, there is exactly one possible value of *n*; therefore, statement (2) alone answers the question definitively. This is the required standard for a Data Sufficiency conclusion: the information need not provide a convenient calculation method, but it must establish a unique answer. GMAT Data Sufficiency questions test whether the supplied facts are enough to answer the stated question, rather than whether every available fact must be used. See the GMAT's overview of the Quantitative Reasoning section at GMAT Exam Structure and its official preparation resources at GMAT Exam Prep.

QUESTION NO: 39 - (HOTSPOT)

The color red has been shown to induce greater aggression in people than the

color blue. Researchers conducted a study to determine whether such colorinduced aggression could influence the amount that consumers were willing to

pay for an identical product in online auction and online negotiation scenarios.

The researchers photographed a single item against each of four background

colors: blue, gray, white, and red. Using a computer, each participant in the study

viewed the item against exactly one of the four background colors. Half of the

participants were told the item was up for auction and were asked to submit their

highest bid for the item. The other half of the participants were told to negotiate

a price with the seller and were asked to offer the highest amount that they

would be willing to pay for the item.

The researchers expected that participants who viewed the red background

would typically behave more aggressively than those who viewed the blue

background. Among the auction group, the researchers hypothesized that more aggressive participants would submit higher bids as they tried to beat other potential bidders. Among the negotiation group, the researchers hypothesized that more aggressive participants would make lower offers as they tried to compete against the seller to get the best deal.

Assuming the researchers' hypothesized link between offers and aggression is correct, for each of the following background colors select More aggressive if, on average, participants in the negotiation group in the study behaved more aggressively when the product was displayed with that background color than the participants did when the product was displayed with a gray background. Otherwise, select Not more aggressive.

ANSWER:

Explanation:

The correct classification follows directly from the meaning that the researchers assign to aggression in the negotiation setting. A participant negotiating with a seller is described as behaving more aggressively when that participant attempts to compete harder for the best deal. In practical terms, that behavior is represented by a lower maximum amount offered for the item. Thus, the comparison for every background color must be made against the average offer under the gray background: a lower offer indicates more aggressive negotiation behavior, while an offer that is not lower does not indicate greater aggression.

Using that rule, the blue-background negotiation result belongs under "Not more aggressive" relative to gray. The white-background result belongs under "More aggressive," because the relevant offer pattern indicates more forceful bargaining than the gray condition. The red-background result also belongs under "More aggressive." This is consistent with the study's proposed mechanism: red is expected to heighten aggression, and, in a negotiation context, heightened aggression is expected to show up as a stronger effort to obtain a favorable price by limiting the amount offered.

Importantly, this question is about the direction of negotiation behavior, not about whether a participant makes a high bid in an auction. The passage distinguishes those settings: aggression can lead to higher amounts in competitive bidding but lower amounts in direct seller negotiations. The completed selections correctly apply the negotiation interpretation throughout. For additional background on GMAT question formats and the reasoning skills assessed, see the official GMAT exam overview.

QUESTION NO: 40

Although a village in a drouqht-stncken area may at first be resistant to using new agricultural techniques, if the village leaders are consulted beforehand and the benefits of the techniques are demonstrated clearly, the agricultural ministry can often effect a real and positive change in agricultural productivity and thus in economic security.

A. a village in a drought-stricken area may at first be resistant to using new agricultural techniques, if the village leaders are consulted beforehand and the benefits of the techniques are demonstrated clearly,

B. a village may be resistant to first using new agricultural techniques in a drought-stricken area, if they consult beforehand with village leaders and clearly demonstrates the techniques' benefits,

C. at first in a drought-stricken area a village may resist the use of new agricultural techniques, if their leaders are consulted beforehand and their benefits are clearly demonstrated,

D. at first a village in a drought-stricken area may be resistant to new agricultural techniques, if the leaders are consulted beforehand and one clearly demonstrates their
benefits,

E. a village in a drought-stricken area may first resist using new agricultural techniques if village leaders are consulted beforehand and the benefits of the techniques are clearly demonstrated,

ANSWER: A

Explanation:

The wording “a village in a drought-stricken area may at first be resistant to using new agricultural techniques, if the village leaders are consulted beforehand and the benefits of the techniques are demonstrated clearly,” is correct because it preserves the sentence’s intended logical structure and its clear grammatical relationships. “Although” properly introduces the initial concession: a village may be reluctant to adopt unfamiliar methods. The main clause then identifies the result: the agricultural ministry can bring about meaningful improvements in productivity and economic security. The conditional clause beginning with “if” supplies the circumstances that enable that positive result—consulting village leaders first and clearly showing the techniques’ benefits. The phrase “the benefits of the techniques” has an unambiguous noun reference, while “the village leaders” clearly identifies the people who must be consulted. This construction also maintains a consistent and sensible sequence: initial resistance may exist, but respectful consultation and effective demonstration can help overcome it. GMAT Verbal questions assess whether a revision conveys the intended meaning with grammatical precision and logical clarity; see the GMAT’s official exam-format overview and official preparation resources.

QUESTION NO: 41

Scientists recently found traces of down on the fossil of a dinosaur, which they describe as typical of the kind that eventually, in birds, develops into feathers.

A. recently found traces of down on the fossil of a dinosaur, which they describe as typical of the kind that eventually, in birds, develops

B. recently found traces of down on the fossil of a dinosaur, describing It as typical of the kind in birds that eventually develop

C. recently found traces of down on the fossil of a dinosaur and describe it to be typical of the kind that, in birds, eventually develops

D. describe the recently found traces of down on the fossil of a dinosaur to be typical of the kind in birds that eventually develop

E. describe the traces of down found recently on the fossil of a dinosaur as typical of the kind that, in birds, eventually develops

ANSWER: E

Explanation:

The best revision is “describe the traces of down found recently on the fossil of a dinosaur as typical of the kind that, in birds, eventually develops” because it creates a complete, logical, and idiomatic sentence: “Scientists describe [the traces] as typical of [a kind of down].” The verb *describe* correctly takes the object “the traces of down” and the complement “as typical,” clearly communicating the scientists’ assessment. The phrase “found recently” efficiently modifies “traces of down” without disrupting the main subject-verb structure. Most importantly, the relative clause “that, in birds, eventually develops into feathers” has the singular antecedent “kind,” so the singular verb *develops* is required. The interrupting phrase “in birds” is correctly set off by commas and precisely limits the developmental claim to birds. This construction also avoids an ambiguous “which,” since the sentence directly identifies the traces—not the fossil or dinosaur—as the thing being described. These choices reflect standard expectations for grammatical agreement, clear modification, and parallel sentence structure in GMAT-style sentence-correction questions. See the Purdue OWL guidance on subject-verb agreement and the GMAT Exam structure overview.

QUESTION NO: 42

Two years ago all automobile dealers in Laurentia began instaling antitheft alarms in all the new cars they sold. Critics of this policy predicted that when thieves could no longer find new cars without alarms, a car alarm in a new car would not deter thieves to the degree it once did. Clearly, however, the critics were wrong: whereas in the last two years the annual number of car thefts in Laurentia has remained about the same as in previous years, last year the proportion of cars stolen that were recently purchased new cars was substantially smaller than it had been two years ago.

In the argument given, the two portions in boldface play which of the following rotes?

A. The first is a prediction that, according to the argument, has proved wrong; the second is evidence on which that assessment of the prediction is based.

B. The first is a prediction that, according to the argument, has proved wrong; the second is evidence that has been used to argue that the prediction was accurate.

C. The first is a claim that has been advanced in support of a position that the argument opposes; the second is evidence that has been used to support that position.

D. The first is a criticism that has been directed against the position that the argument advocates; the second is evidence on which that criticism has been based. The first is a criticism of a position that the argument opposes; the second is evidence on which t^i criticism is based.

ANSWER: A

Explanation:

The first boldfaced portion states the critics’ prediction: once alarms became standard equipment in new cars, their presence would lose much of its deterrent effect because thieves would no longer be able to choose new cars without alarms. The argument explicitly rejects that prediction with the statement that “the critics were wrong.” The second boldfaced portion supplies the key factual evidence for that judgment: the share of stolen cars that were recently purchased new cars declined substantially after dealers began installing alarms in all new cars. This change is relevant because the policy specifically affected newly sold cars. Even though the overall number of automobile thefts remained roughly unchanged, the reduced representation of recently purchased new cars among stolen vehicles supports the inference that alarms continued to deter theft of those cars. Thus, the first portion is a prediction the argument says has been disproved, and the second is evidence used to support that assessment. This is a standard Critical Reasoning boldface task: identify each statement’s role in the argument—here, a rejected prediction followed by supporting evidence for rejecting it. See the GMAT’s overview of the Verbal section and Critical Reasoning skills at mba.com and the official GMAT preparation resources at mba.com.

QUESTION NO: 43

Based on the passage, which of the following planets would likely appear darkest to a human being standing on its surface?

A. An airless planet illuminated exclusively by a star that emits much of its light as ultraviolet light

B. .A planet that has an atmosphere and is illuminated exclusively by an extremely hot star

C. A planet that has an atmosphere and is illuminated exclusively by an extremely cool star

D. An airless planet illuminated exclusively by an average temperature star that is not brightest at the yellow part of the spectrum

E. A planet that has an atmosphere and is illuminated exclusively by a star that emits approximately half of its light at frequencies in the visible spectrum

ANSWER: C

Explanation:

A planet that has an atmosphere and is illuminated exclusively by an extremely cool star would appear darkest because an extremely cool star emits most of its radiation at relatively long wavelengths, predominantly outside the range to which human vision responds. Human eyes detect only the visible portion of the electromagnetic spectrum, roughly 400–700 nanometers; radiation emitted mainly in the infrared does not create a bright visual scene. Consequently, even if the star provides substantial total energy, comparatively little of that energy would be available as visible illumination for a person on the planet's surface. An atmosphere does not change the key conclusion: it can scatter or absorb incoming light, but it cannot convert a predominantly nonvisible stellar spectrum into enough visible light to make the surroundings bright. The result would be a scene with very limited visible illumination and therefore the darkest apparent environment. The relationship between an object's temperature and the wavelength at which it radiates most strongly is described by Wien's law; cooler objects peak at longer wavelengths. See NASA's overview of the electromagnetic spectrum and the University of Nebraska–Lincoln's explanation of Wien's law.

QUESTION NO: 44

A region in a plane is said to be convex if, for every two points in the region, the line segment joining the two points is completely contained in the region. If a sector of a circle has a central angle with degree measure m > 0, which of the following determines the set of all values of m (less than 360) for which the sector is convex?

A. 0 < m > 90

B. 90 ≤ m ≤ 180

C. 0 < m ≤ 180

D. 180 ≤ m < 360

E. 0 < m < 360

ANSWER: C

Explanation:

0 < m ≤ 180 is correct. A circular sector consists of the radii bounding the central angle together with the circular arc and all points between them. When the central angle is at most 180 degrees, the sector is no more than a semicircle-shaped region. For any two points selected within such a sector, the straight segment connecting them remains within the angular wedge and within the circle, so the entire segment is contained in the sector. This satisfies the definition of convexity.

The boundary case of 180 degrees is included: a semicircle, including its diameter and arc boundary, is convex. In contrast, convexity depends on the sector not wrapping around more than a straight angle; thus the allowable positive degree measures extend from values greater than zero through 180 degrees inclusive. This conclusion uses the standard geometric definition of a convex set: it contains every line segment between any pair of its points. See Wolfram MathWorld: Convex Set and Circular sector.