Electronic Graduate Management Admission Test (e-GMAT) Practice Exam (Sample)

Study Guide

BY EXAMZIFY

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Questions

1. What calculation can be performed when you know the average speed for a trip and the total distance?

A. Calculate total time spent on the trip

B. Determine the time taken for each individual leg of the trip

C. Find the total distance of the trip

D. Identify the average speed for each leg of the trip

2. In how many ways can concerts be scheduled, with 2 in city F but not on consecutive nights?

A. 60

B. 90

C. 120

D. 150

3. For the equation in the grid pathing problem, which calculation accounts for duplicate moves?

A. Adding moves together

B. Dividing by the number of unique moves

C. Multiplying by 2

D. Multiplying by the factorial of each type of move

4. What is a distinguishing feature of reasoning compared to a factual statement?

A. Reasoning is devoid of subjective opinion

B. Reasoning is an opinion inherently accepted as fact

C. Reasoning involves forward-thinking assumptions

D. Reasoning cannot be applied in scientific contexts

5. What is essential to consider when calculating the combination of outcomes for specific integers?

A. The total number of integers

B. Only favorable outcomes

C. The combinations of outcomes

D. The highest number in the range

6. How many subsets does a set with "n" elements have?

A. 2^n

B. n^2

C. n!

D. n+1

7. What would be the value of Sqrt 9?

A. 2

B. 3

C. 4

D. 5

8. If Rita goes first in a stick-removal game, which values of n guarantees Sam can always win?

A. 5

B. 6

C. 7

D. 8

9. Which of the following values is the approximation for the square root of 17?

A. 4.00

B. 4.10

C. 4.12

D. 4.20

10. What value corresponds to the square root of 5.42 approximately?

A. 2.33

B. 2.23

C. 2.53

D. 1.93

Answers

1. A
2. C
3. D
4. C
5. C
6. A
7. B
8. B
9. C
10. B

Explanations

1. What calculation can be performed when you know the average speed for a trip and the total distance?

A. Calculate total time spent on the trip

B. Determine the time taken for each individual leg of the trip

C. Find the total distance of the trip

D. Identify the average speed for each leg of the trip

When you know the average speed for a trip and the total distance, you can accurately calculate the total time spent on the trip using the relationship defined by the formula: Time = Distance / Speed. By substituting the known values into this equation, you can determine how much time it took to travel the entire distance at that average speed. This formula directly connects the concepts of distance, speed, and time, making it straightforward to derive the total travel time. This calculation provides valuable insights when planning trips or analyzing travel efficiency, as understanding how long a trip takes at a given speed can help with scheduling and logistical arrangements. While there are other aspects of travel that could be explored, the direct computation of total time with the given data is the most straightforward and relevant method based on the information provided.

2. In how many ways can concerts be scheduled, with 2 in city F but not on consecutive nights?

A. 60

B. 90

C. 120

D. 150

To determine how many ways concerts can be scheduled in city F with 2 concerts not on consecutive nights, you first need to think about how many total nights are available and how to arrange two concerts with the required spacing. Consider that the concerts can be scheduled over a series of nights. If you have n total nights, placing the two concerts requires inserting nights between them to ensure they are not consecutive. By arranging this carefully, you can visualize the spacing. For example, if you denote the two concerts as C1 and C2, and other nights as "X" (for non-concert nights), you would consider combinations like: - X C1 X C2 X - X C2 X C1 X - and so forth. If you set n as the total number of available nights, you fit the two concerts into the available slots without allowing them to occupy consecutive spaces. This leads to a combinatorial problem where you consider how many different ways you can select the nights for C1 and C2, maintaining the non-consecutive requirement. The combinatorial formula may involve arranging the slots that separate the concerts and determining the number of ways to choose which nights these concerts will fall on. Calculating the total number of ways this

3. For the equation in the grid pathing problem, which calculation accounts for duplicate moves?

A. Adding moves together

B. Dividing by the number of unique moves

C. Multiplying by 2

D. Multiplying by the factorial of each type of move

In grid pathing problems, particularly those that involve counting unique paths while accounting for duplicate moves, it's essential to utilize combinatorial mathematics. The correct answer involves multiplying by the factorial of each type of move because this approach effectively removes the duplicity by acknowledging the number of ways to arrange the identical moves. When you are calculating the total number of unique paths in a grid, particularly when you have multiple moves in the same direction (like moving right or down), each sequence of moves can be rearranged in various ways. For example, if your path consists of five moves to the right and three moves down, simply counting all possible sequences of eight moves would result in counting many identical paths multiple times. By using the factorial of each type of move, you can determine how many unique arrangements of these moves are possible. This is mathematically represented as: - Total number of moves factorial divided by the factorial of each type of move. This method ensures all possible arrangements of the moves are counted, while duplicates arising from identical moves are effectively discounted, leading to the final count reflecting only unique paths from the start to the endpoint on the grid. Using this combinatorial principle ensures the accurate counting of paths without overcounting due to duplicated movements, hence affirm

4. What is a distinguishing feature of reasoning compared to a factual statement?

A. Reasoning is devoid of subjective opinion

B. Reasoning is an opinion inherently accepted as fact

C. Reasoning involves forward-thinking assumptions

D. Reasoning cannot be applied in scientific contexts

Reasoning is a cognitive process that allows individuals to draw conclusions, make predictions, and evaluate situations based on available information. One of its key distinguishing features is that it often involves forward-thinking assumptions, particularly in contexts where outcomes are not yet known. This means that reasoning requires individuals to think ahead and consider possible future scenarios based on the evidence available at a given time. In contrast to a factual statement, which presents verifiable information about reality, reasoning deals with the logical connections and implications of facts, leading to conclusions that are not definitively established until they are tested. For example, when making decisions or predictions, individuals utilize reasoning to evaluate the implications of current data and anticipate future outcomes, which is fundamental to problem-solving and critical thinking. This forward-thinking aspect of reasoning highlights its dynamism and potential for adaptation, as it is not merely a reflection of already established facts but an active engagement with possibilities based on those facts. By incorporating assumptions and considering various outcomes, reasoning embodies a proactive approach to understanding and navigating complex situations.

5. What is essential to consider when calculating the combination of outcomes for specific integers?

A. The total number of integers

B. Only favorable outcomes

C. The combinations of outcomes

D. The highest number in the range

When calculating the combination of outcomes for specific integers, it is crucial to consider the combinations of outcomes. This is because the concept of combinations involves selecting a subset of items from a larger set without regard for the order of selection. When you focus on combinations, you're effectively determining how many ways you can choose a certain number of outcomes from a designated set of integers. In this context, combinations become essential as they help quantify the various groupings of integers that can result from your defined parameters. This quantification is foundational when dealing with probability and other analyses that depend on the relationship between sets of integers. While aspects like the total number of integers and favorable outcomes can provide context and additional insights into the problem, they do not directly address the core concept of how many unique ways you can form groups from the integers in question. The highest number in the range may affect the potential outcomes but is not the primary consideration for calculating combinations. Therefore, focusing on the combinations of outcomes is the most critical factor in this scenario.

6. How many subsets does a set with "n" elements have?

A. 2^n

B. n^2

C. n!

D. n+1

A set with "n" elements has \(2^n\) subsets due to the fundamental principle of combinations. Each element in the set has two possibilities: it can either be included in a subset or excluded from it. Consequently, for each of the n elements, the choices of inclusion or exclusion multiply together. To illustrate, consider a set with a small number of elements, such as a set with 3 elements, say {a, b, c}. Each element can be included in a subset or not included, leading to the following combinations: - Include none: {} - Include a: {a} - Include b: {b} - Include c: {c} - Include a and b: {a, b} - Include a and c: {a, c} - Include b and c: {b, c} - Include all: {a, b, c} In total, there are 8 subsets, which is \(2^3\) since \(3\) is the number of elements. This pattern holds for any set size, thus confirming that a set with "n" elements indeed has \(2^n\) subsets. This principle is foundational in combinatorics and helps in various areas

7. What would be the value of Sqrt 9?

A. 2

B. 3

C. 4

D. 5

The value of the square root of 9 is 3, which occurs because square root functions are defined as the number that, when multiplied by itself, yields the original number. In this case, 3 multiplied by 3 equals 9, satisfying the definition of a square root. This understanding of square roots is fundamental in mathematics and is applicable across various problems, especially in algebra and geometry. Recognizing that square roots can only result in non-negative outputs will reinforce the correct solution, in which 9 being a perfect square directly leads to 3 as its square root.

8. If Rita goes first in a stick-removal game, which values of n guarantees Sam can always win?

A. 5

B. 6

C. 7

D. 8

In a stick-removal game, players take turns removing one or more sticks from a pile, and the player who removes the last stick wins. The strategy involves understanding winning and losing positions, particularly what numbers of sticks guarantee that one player can force a win regardless of the opponent's moves. When analyzing the game, a player has a winning strategy if they can move the game into a losing position for their opponent. A losing position is one from which any move will leave the opponent in a winning position. In this context, we can determine specific values of n (the number of sticks) that guarantee a win for Sam when Rita goes first. Here's how the analysis works for the choices given: - For n = 1, 2, 3, 4, and 5, Rita can always take the last stick, leaving Sam with no options to win. - For n = 6, no matter how many sticks Rita removes (1 to 5), she will leave Sam with a number of sticks (1 to 5), from which he can always win on his subsequent turns. When Rita goes first with 6 sticks, Sam has a guaranteed strategy to win. If Rita removes 1 stick, Sam will have

9. Which of the following values is the approximation for the square root of 17?

A. 4.00

B. 4.10

C. 4.12

D. 4.20

To determine the square root of 17, it's helpful to start by identifying perfect squares close to 17. The perfect squares immediately surrounding 17 are 16 (which is 4 squared) and 25 (which is 5 squared). Since 17 is between 16 and 25, we know that the square root of 17 must be between 4 and 5. Specifically, since 17 is just slightly greater than 16, we can infer that the square root will be a bit more than 4. The squares of the options available give us clues: - Squaring 4.1 results in 16.81, which is less than 17. - Squaring 4.2 results in 17.64, which is greater than 17. - The next step is to see where 4.12 falls: squaring it gives us approximately 16.9744, which is still less than 17 but closer than 4.1. Therefore, 4.12 is a more precise approximation of the square root of 17 than the other values provided. The estimation also becomes clearer through the process of exclusion, as both 4.00 and 4.10

10. What value corresponds to the square root of 5.42 approximately?

A. 2.33

B. 2.23

C. 2.53

D. 1.93

To determine the value that corresponds to the square root of 5.42, we can analyze the options through estimation and comparison with known square roots. The square root of a number is the value that, when multiplied by itself, yields the original number. Since 5.42 is slightly more than 5, we can use the square roots of numbers close to 5 for approximation. The square root of 4 is 2.0, and the square root of 9 is 3.0, meaning that the square root of 5 will be between 2.0 and 3.0. Calculating further, we find that the square root of 5 is approximately 2.236 (because 2.236 multiplied by 2.236 is roughly 5). Since 5.42 is a little more than 5, its square root should be slightly larger than 2.236. Looking at the choices provided, 2.23 is the closest value to that calculation. It's slightly lower than the actual estimate but remains a reasonable approximation given the options. This means that 2.23 accurately reflects the approximate square root of 5.42 given the choices available.