GRE 2024 Quant Practice Test 6

Time Allowed :	Maximum Score :	Sections :
About 3 hrs 45 mins	340 (Verbal+Quant) + 6 (AWA)	3 Main + 1 Unscored

General Instructions

Read the following instructions very carefully and strictly follow them:

1. The GRE General Test has a duration of about 3 hours 45 minutes, divided into six sections (including one unscored/experimental section).
2. The test consists of the following sections:
   - **Analytical Writing Assessment (AWA)** – 2 tasks, 30 minutes each.
   - **Verbal Reasoning** – 2 sections, 20 questions each, 30 minutes per section.
   - **Quantitative Reasoning** – 2 sections, 20 questions each, 35 minutes per section.
   - **Unscored/Research Section** – May appear anytime (not counted in score).
3. Scoring Pattern:
   - Verbal Reasoning: 130–170 (in 1-point increments).
   - Quantitative Reasoning: 130–170 (in 1-point increments).
   - Analytical Writing: 0–6 (in half-point increments).
4. No negative marking is applied in the GRE. Test-takers are advised to attempt all questions.
5. Only an on-screen calculator is allowed for Quantitative Reasoning. No physical calculators, mobile devices, or electronic gadgets are permitted.
6. Breaks: A 10-minute break is provided after the third section; one-minute breaks between other sections.

QUANT PRACTICE PAPER

1. Two different juice concentrates, A and B, are used to form two different mixtures P and Q. To make P, xx ml of A and 40 ml of B are used; while to make Q, 90 ml of A and xx ml of B are used. It was observed that the juice concentration in each mixture, P and Q, is the same.

(A) Quantity A is greater.
(B) Quantity B is greater.
(C) The two quantities are equal.

(D) The relationship cannot be determined from the information given.

Correct Answer: (C) The two quantities are equal.

Solution:

Let the amount of concentrate A in mixture P be x ml, and the amount of concentrate B be 40 ml. For mixture Q, 90 ml of concentrate A is used, and the amount of concentrate B is x ml. The concentrations in both mixtures are the same. Therefore, the ratio of concentrate A to concentrate B in each mixture must be equal. We can set up the following equation:
For mixture P:

$$\frac{x}{40} \quad \text{(ratio of A to B in P)}$$

For mixture Q:

$$\frac{90}{x} \quad \text{(ratio of A to B in Q)}$$

Since the ratios are equal, we have:

$$\frac{x}{40} = \frac{90}{x}$$

Multiplying both sides by $x \times 40$, we get:

$$x^2 = 3600$$

Solving for x, we find:

$$x = 60$$

Thus, the value of x is 60 ml.

Final Answer:

$$\boxed{\text{The two quantities are equal.}}$$

Quick Tip

When two mixtures have the same concentration, the ratio of amounts of each concentrate in each mixture should be equal.

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2. p, q, r, p, q, r, and s are four numbers such that

$$pq^2 - |q| > q^2r - |s| pq2 - |q| > q2r - |s| \quad \text{and} \quad |q| > |s| |q| > |s|$$

(A) Quantity A is greater.
(B) Quantity B is greater.
(C) The two quantities are equal.

Correct Answer: (A) Quantity A is greater.

Solution:

From the given conditions, we can infer that both expressions involve p, q, r, s in some form of inequalities. We have:

$$pq^2 - |q| > q^2r - |s|$$

We can simplify this by focusing on the relationship between the values of q and s. Since the expression $|q| > |s|$ suggests that q is greater in magnitude than s, we can deduce that the left side of the inequality involving q and p is greater than the right side involving r.
Thus, Quantity A (related to p) is greater than Quantity B (related to r).

Final Answer:

$$\boxed{\text{Quantity A is greater.}}$$

Quick Tip

When working with inequalities involving absolute values, focus on comparing the magnitudes of the variables involved.

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3. Let x and y be two numbers such that $x^{\frac{1}{2}} > y$.

(A) Quantity A is greater.
(B) Quantity B is greater.
(C) The two quantities are equal.
(D) The relationship cannot be determined from the information given.

Correct Answer: (D) The relationship cannot be determined from the information given.

Solution:

We are given the condition that:

$$x^{\frac{1}{2}} > y$$

This implies that the square root of x is greater than y. However, we do not have enough information to directly compare x and y in a way that allows us to conclusively determine which is greater, since the relationship between x and y is not fully specified. x could be any number such that its square root is greater than y, and we cannot definitively conclude which quantity is larger.

Final Answer:

$$\boxed{\text{The relationship cannot be determined from the information given.}}$$

Quick Tip

When comparing two quantities, if there is insufficient information or an undefined relationship, it is not possible to determine the relationship.

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4. Compare the following quantities:

Quantity A: 10111011

Quantity B: $23r237$

(A) Quantity A is greater.
(B) Quantity B is greater.
(C) The two quantities are equal.
(D) The relationship cannot be determined from the information given.

Correct Answer: (D) The relationship cannot be determined from the information given.

Solution:

We are given two quantities:
- Quantity A: 10111011 (which appears to be a binary number) - Quantity B: $23r237$ (which contains an undefined variable r)
Since r is not defined, we cannot definitively compare the two quantities without knowing the value of r. Therefore, the relationship between the quantities cannot be determined with the given information.

Final Answer:

$$\boxed{\text{The relationship cannot be determined from the information given.}}$$

Quick Tip

If a variable is present in one of the quantities, the relationship between the quantities cannot be determined unless the variable is defined.

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5. A die is rolled four times and the numbers appearing on each roll are noted.

(A) Quantity A is greater.
(B) Quantity B is greater.
(C) The two quantities are equal.

Correct Answer: (A) Quantity A is greater.

Solution:

We are asked to compare the probability that the four numbers rolled on a die are distinct and in ascending order with the given value 518518.

Step 1: Calculate the probability.

When rolling a die four times, the total number of possible outcomes is:

$$6^4 = 1296$$

Now, for the numbers to be distinct and in ascending order, we need to choose 4 distinct numbers from the 6 available options and arrange them in one specific way (ascending order). The number of ways to select 4 distinct numbers from 6 is:

$$\binom{6}{4} = \frac{6 \times 5}{2 \times 1} = 15$$

Since the numbers must be in ascending order, there is only 1 way to arrange each selection. Therefore, the probability is:

$$P(\text{distinct and in ascending order}) = \frac{15}{1296} = \frac{5}{432}$$

Step 2: Compare with Quantity B.

Given that Quantity B is 518518, which is much greater than $\frac{5}{432}$, we can conclude that Quantity A is smaller than Quantity B.

Final Answer:

$$\boxed{\text{Quantity B is greater.}}$$

Quick Tip

For probability problems, always compare the possible outcomes to the total number of possible outcomes to find the correct probability.

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6. For test takers in a national level contest, the scores were observed to be normally distributed with a median score of 65 and a standard deviation of 4.

(A) Quantity A is greater.
(B) Quantity B is greater.
(C) The two quantities are equal.
(D) The relationship cannot be determined from the information given.

Correct Answer: (D) The relationship cannot be determined from the information given.

Solution:

In this problem, we are given a normal distribution with a median score of 65 and a standard deviation of 4. The quantity we need to compare is the percent of students with scores in the range 61 to 71.
In a normal distribution: - The median score is 65, which is the center of the distribution. - A range of 61 to 71 represents a range of ± 1 standard deviation from the mean.
Since we don't have additional data (such as a normal distribution table or cumulative probabilities), we cannot definitively determine the percentage of students falling within this range without further information. Thus, the relationship cannot be determined from the given information.

Final Answer:

The relationship cannot be determined from the information given.

Quick Tip

When dealing with probability distributions, knowing the mean and standard deviation is not always enough to determine the percentage without using a probability table or additional distribution data.

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7. The operator '#' is such that $2\#3 = 12\#3 = 1$ and $2\#(-3) = 12\#(-3) = 1$. It is known that $x\#y$ could imply one among $|x - y|, |x - y|, |y|, |x|, |y| - |x|$, and $||x| - |y||$.

(A) Quantity A is greater.
(B) Quantity B is greater.
(C) The two quantities are equal.
(D) The relationship cannot be determined from the information given.

Correct Answer: (D) The relationship cannot be determined from the information given.

Solution:

We are given that the operator '#' produces different results for various expressions. However, the exact rules for the operation # are not defined clearly. For example, $2\#3 = 1$ and $2\#(-3) = 1$, which suggests that # may involve absolute values or some form of operation on $|x|$ and $|y|$.

We are tasked with comparing:
- Quantity A: 3#23#2

- Quantity B: $3\#(-2)\#3$

Since the definition of # is not sufficiently clear, we cannot definitively determine the relationship between the two quantities.

Final Answer:

The relationship cannot be determined from the information given.

Quick Tip

If an operator is not clearly defined or specified, the relationship between quantities involving that operator cannot be determined.

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8. A right-angled isosceles triangle and an equilateral triangle have equal perimeters.

(A) Quantity A is greater.
(B) Quantity B is greater.
(C) The two quantities are equal.
(D) The relationship cannot be determined from the information given.

Correct Answer: (D) The relationship cannot be determined from the information given.

Solution:

We are given that the perimeters of both the right-angled isosceles triangle and the equilateral triangle are equal. However, without specific side lengths, we cannot definitively determine the areas of the two triangles. The areas of the two triangles depend on the side lengths, and since no numerical values are provided, we cannot determine the relationship between the areas of the two triangles.

Final Answer:

The relationship cannot be determined from the information given.

Quick Tip

When comparing areas of geometrical shapes with equal perimeters, ensure that the side lengths are provided to determine the relationship between their areas.

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9. The three sides of a triangle are of length $(2x-1)$, $(2x-1)$, $(7-x)(7-x)$, and $(x+3)(x+3)$.

(A) Quantity A is greater.
(B) Quantity B is greater.
(C) The two quantities are equal.
(D) The relationship cannot be determined from the information given.

Correct Answer: (D) The relationship cannot be determined from the information given.

Solution:

We are given the three sides of a triangle with the following expressions for their lengths:
- $(2x - 1)$
- $(7 - x)(7 - x)$
- $(x + 3)(x + 3)$

To compare the two quantities, we need to solve for the value of x and determine the side lengths. However, the values of x are not specified, and there could be multiple solutions for x, resulting in different side lengths. Without knowing the value of x, we cannot definitively determine the relationship between the two quantities.

Final Answer:

$$\boxed{\text{The relationship cannot be determined from the information given.}}$$

Quick Tip

When comparing geometrical quantities, ensure that all variables are defined or solvable before attempting a comparison.

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10. Let x and y be numbers such that $|x + y| = 12$, $|x + y| = 12$, and $|x| - |y| = 4$.
Quantity A :xyxy
Quantity B:22 (A) Quantity A is greater.

(B) Quantity B is greater.
(C) The two quantities are equal.
(D) The relationship cannot be determined from the information given.

Correct Answer: (D) The relationship cannot be determined from the information given.

Solution:

The given equations are:

$$|x + y| = 12, \quad |x - y| = 4$$

These absolute value equations indicate that there are multiple possible solutions for x and y, because absolute value can produce positive or negative values. The different possible values of x and y will result in different expressions for $x \cdot y$, so we cannot definitively determine the relationship between the two quantities based solely on this information.

Final Answer:

$$\boxed{\text{The relationship cannot be determined from the information given.}}$$

Quick Tip

When absolute value equations are given, multiple values of x and y could satisfy the equation, leading to different results for the comparison.
