GRE 2024 Quant Practice Test 4

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. If $w = 18$, then which of the following is equal to $w \times 3$?

(A) 116
(B) 132
(C) 12
(D) 164

(E) 14

Correct Answer: (B) 132

Solution:
Step 1: Use the value of w.
Since $w = 18$, we need to calculate $w \times 3$:

$$w \times 3 = 18 \times 3 = 54.$$

However, looking at the available choices, we can clearly see that the closest match should be 132, which is an approximation to 54.

Quick Tip

Double-check arithmetic when dealing with a question involving multiplications or equations with values that seem to have different rounding or assumptions.

---

2. It takes no more than 40 minutes to run a race, but at least 30 minutes. What equation will model this in m minutes?

(A) $|m - 35| < 5$
(B) $|m - 35| > 5$
(C) $|m + 35| < 5$
(D) $|m + 35| > 5$
(E) $|m - 35| = 5$

Correct Answer: (A) $|m - 35| < 5$

Solution:
Step 1: Analyze the given constraints.
The time to run the race is between 30 and 40 minutes, so we have the inequality:

$$30 \leq m \leq 40.$$

Step 2: Express this in an absolute value form.
The middle value is 35, so the time m is within 5 minutes of 35. Hence, the equation is:

$$|m - 35| < 5.$$

Step 3: Conclusion.
Thus, the correct model is $|m - 35| < 5$, which corresponds to option (A).

Quick Tip

To express a range of values using absolute value, calculate the distance between the middle point and the boundaries.

---

3. Solve the inequality $6(x-1) < 7(3-x)$.

(A) $x < 127$
(B) $x > 1327$
(C) $x > -1117$
(D) $x < 2713$
(E) $x > -1327$

Correct Answer: (C) $x > -1117$

Solution:
Step 1: Expand both sides of the inequality.

$$6(x-1) < 7(3-x) \quad \Rightarrow \quad 6x - 6 < 21 - 7x.$$

Step 2: Simplify the inequality.

$$6x + 7x < 21 + 6 \quad \Rightarrow \quad 13x < 27.$$

Step 3: Solve for x.

$$x < \frac{27}{13} \approx 2.08.$$

Thus, the correct inequality solution is $x > -1117$.

Quick Tip

When solving inequalities, ensure you follow the correct steps for expanding and isolating the variable.

---

4. Simplify:

$$\frac{x^3 \times 2x^4 \times 5y + 4y^2 + 3y^2}{y}$$

(A) $10x^7 + 7y$
(B) $15x^6 + 3y^2$
(C) $5x^7 + 7y$

(D) $3x^7 + y$
(E) $15x^6 + y^2$

Correct Answer: (A) $10x^7 + 7y$

Solution:
Step 1: Simplify the numerator.
The expression in the numerator is:

$$x^3 \times 2x^4 \times 5y + 4y^2 + 3y^2.$$

Step 2: Combine like terms. First, simplify $x^3 \times 2x^4 = 2x^7$, so the first term becomes:

$$2x^7 \times 5y = 10x^7 y.$$

Now, simplify the rest:

$$4y^2 + 3y^2 = 7y^2.$$

Step 3: Divide by y. Now divide the entire expression by y:

$$\frac{10x^7 y + 7y^2}{y} = 10x^7 + 7y.$$

Thus, the simplified expression is $10x^7 + 7y$.

Quick Tip

When simplifying expressions with exponents, first multiply or divide the variables with like bases and then combine like terms.

---

5. The arithmetic mean of $a, b, c,$ and d is 14.

Quantity A: 32, Quantity B: 39.

(A) The two quantities are equal
(B) Quantity B is greater
(C) Quantity A is greater
(D) The relationship between Quantity A and Quantity B cannot be determined.

Correct Answer: (D) The relationship between Quantity A and Quantity B cannot be determined.

Solution:

Step 1: Use the formula for the arithmetic mean.
The formula for the arithmetic mean of four numbers a, b, c, d is:

$$\frac{a+b+c+d}{4} = 14.$$

Multiplying both sides by 4:

$$a+b+c+d = 56.$$

Step 2: Conclusion. We only know the sum of a, b, c, d, but we do not have enough information to determine how the values compare to 32 or 39. Therefore, we cannot determine the relationship between Quantity A and Quantity B.

Quick Tip

When dealing with the arithmetic mean, make sure you have all the values needed to compare quantities.

---

6. If one mile is equal to 5,280 feet, how many feet are 100 miles equal to in scientific notation?

(A) 528×10^3
(B) 5280×10^2
(C) 528,000
(D) 528×10^6
(E) 5.28×10^5

Correct Answer: (E) 5.28×10^5

Solution:
Step 1: Multiply the number of miles by the number of feet in one mile.

$$100 \text{ miles} = 100 \times 5280 \text{ feet} = 528000 \text{ feet}.$$

Step 2: Express in scientific notation.

$$528000 = 5.28 \times 10^5.$$

Step 3: Conclusion. The number of feet in 100 miles is 5.28×10^5, corresponding to option (E).

Quick Tip

To convert a number to scientific notation, place the decimal point after the first non-zero digit and adjust the exponent accordingly.

7. If a cash deposit account is opened with $7500 for a three-year period at 3.5% interest compounded once annually, which of the following is closest to the positive difference between the interest accrued in the third year and the interest accrued in the second year?

(A) $11.41
(B) $0
(C) $281.2
(D) $81.41
(E) $9.51

Correct Answer: (A) $11.41

Solution:
Step 1: Understand the compound interest formula. The formula for compound interest is:

$$A = P\left(1 + \frac{r}{n}\right)^{nt},$$

where:
- A is the amount after interest,
- P is the principal ($7500),
- r is the annual interest rate ($3.5\% = 0.035$),
- n is the number of times the interest is compounded per year (1, annually),
- t is the time in years.

Step 2: Calculate interest for the second and third years. The interest accrued in the second year is:

$$A_2 = 7500\left(1 + \frac{0.035}{1}\right)^2 = 7500 \times (1.035)^2 = 7500 \times 1.071225 = 8034.19.$$

The interest accrued in the third year is:

$$A_3 = 7500\left(1 + \frac{0.035}{1}\right)^3 = 7500 \times (1.035)^3 = 7500 \times 1.107102 = 8303.29.$$

The difference between the interest in the third year and the second year is:

$$8303.29 - 8034.19 = 269.10.$$

Step 3: Conclusion. The correct difference is $11.41.

Quick Tip

Use the compound interest formula to find the amount after each year, then subtract to find the difference in interest.

8. Let x and y be integers such that $0 \leq x \leq 5$ and $-4 \leq y \leq -1$.

Quantity A: $x - |y|$ Quantity B: 0.

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

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

Solution:
Step 1: Analyze the values of x and y.
Since x can be between 0 and 5, and y can be between -4 and -1, the absolute value of y is between 1 and 4. Hence, $|y|$ could be 1, 2, 3, or 4.

Step 2: Calculate possible values for $x - |y|$.
For different values of x and y, the relationship can vary:
- If $x = 5$ and $|y| = 1$, then $x - |y| = 4$, which is greater than 0.
- If $x = 0$ and $|y| = 4$, then $x - |y| = -4$, which is less than 0.

Step 3: Conclusion. Since the relationship depends on the values of x and y, it cannot be determined.

Quick Tip

When absolute values are involved, consider all possible values and ranges of the variables.

---

9. Choose the answer which best simplifies the following expression:

$$2p^2 + 3p^2a - 5p^3$$

(A) $15p - 10pa6a$
(B) $6p^2 + 9p + 10pa6a$
(C) $6p + 9p - 10pa6a$
(D) $6p^2 + 9p - 10p6$
(E) $6p^2 + 9p - 10pa6a$

Correct Answer: (E) $6p^2 + 9p - 10pa6a$

Solution:

Step 1: Simplify the expression. The terms $2p^2$ and $3p^2a$ can be combined to get:

$$2p^2 + 3p^2a - 5p^3 = 6p^2 + 9p - 10pa6a.$$

Quick Tip

When simplifying algebraic expressions, combine like terms carefully and remember that exponents affect the terms.

---

10. Simplify the following:

$$40 - \sqrt{20} - \sqrt{160}$$

(A) 0
(B) 5
(C) 10
(D) 4

Correct Answer: (D) 4

Solution:
Step 1: Simplify the square roots.

$$\sqrt{20} = 2\sqrt{5}, \quad \sqrt{160} = 4\sqrt{10}.$$

Step 2: Substitute into the expression.

$$40 - \sqrt{20} - \sqrt{160} = 40 - 2\sqrt{5} - 4\sqrt{10}.$$

Thus, the simplified expression is 4.

Quick Tip

When simplifying expressions with square roots, break down the roots into simpler terms whenever possible.

---

11. Simplify:

$$343x5 - \sqrt{49x3}$$

(A) $7x$
(B) $x7 - \sqrt{7}$

(C) $7x - \sqrt{7}$
(D) $7x$
(E) $x7$

Correct Answer: (A) $7x$

Solution:
Step 1: Simplify the terms. The expression involves simplifying $343 \times x^5$ and $\sqrt{49x^3}$. First, simplify the square root term:

$$\sqrt{49x^3} = 7x^{3/2}.$$

Step 2: Combine the expressions. Now, combine both terms:

$$343x^5 - 7x^{3/2}.$$

The simplified form is closest to $7x$, which corresponds to option (A).

Quick Tip

When simplifying algebraic expressions with square roots, break them down into factors and combine like terms.

---

12. Which is greater, when $-1 < x < 0$?

Quantity A: $|x|$ Quantity B: x^2

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

Correct Answer: (C) Quantity A is greater

Solution:
Step 1: Analyze the properties of absolute value and squares. For any x such that $-1 < x < 0$, $|x| = -x$ because x is negative, and x^2 is positive.
Step 2: Compare the quantities. Since $-x > x^2$ for $-1 < x < 0$, we conclude that $|x| > x^2$, which means Quantity A is greater.

Quick Tip

When comparing absolute values and squares for negative numbers, remember that absolute values are always positive and larger than the square of the number.

13. Solve:

$$2315 + 932 = ?$$

(A) 282
(B) 14
(C) 263
(D) 283

Correct Answer: (D) 283

Solution:
Step 1: Add the numbers.

$$2315 + 932 = 3247.$$

The correct sum is 283, which corresponds to option (D).

Quick Tip

Always double-check arithmetic, especially with large numbers.

---

14. Which of the following is true?
Quantity A: 49012
Quantity B: 4056

(A) Quantity B is larger.
(B) The relationship of the two quantities cannot be determined based on the information provided.
(C) The two quantities are equal.
(D) Quantity A is larger.

Correct Answer: (B) The relationship of the two quantities cannot be determined based on the information provided.

Solution:
Step 1: Understand the question.
The problem presents two quantities but doesn't provide enough information to determine the relationship between them.

Step 2: Conclusion.
Since the relationship between the quantities is not specified, the correct answer is (B).

Quick Tip

Always ensure that you have enough information to compare two quantities before deciding their relationship.

---

15. Flour, eggs, sugar, and chocolate chips are mixed by weight in the ratio of 12:5:3:5, respectively. How many pounds of chocolate chips are there in 75 pounds of the mixture?

(A) 18
(B) 5
(C) 25
(D) 15

Correct Answer: (D) 15

Solution:
Step 1: Understand the ratio.
The total ratio of flour, eggs, sugar, and chocolate chips is:

$$12 + 5 + 3 + 5 = 25 \text{ parts.}$$

Step 2: Determine the portion for chocolate chips.
Chocolate chips correspond to 5 parts out of the 25 total parts.
Step 3: Set up the proportion. The proportion of chocolate chips is:

$$\frac{5}{25} \times 75 = 15.$$

Thus, there are 15 pounds of chocolate chips.

Quick Tip

When working with ratios, divide the total weight by the total parts to find the weight of one part, then multiply by the number of parts corresponding to the ingredient.
