

GRE Quantitative Reasoning Practice Test-4, 2024

Time Allowed : 1 Hour 58 Minutes

Maximum Marks : 340

General Instructions

Read the following instructions very carefully and strictly follow them:

1. There is no penalty for incorrect answers on the Verbal Reasoning and Quantitative Reasoning sections. This means you should always answer every question, even if you have to guess.
2. Within any section of the test, you can mark questions you want to review and change your answers as long as the time for that section has not expired.
3. The Analytical Writing section is always presented first. The Verbal Reasoning and Quantitative Reasoning sections may appear in any order after the essay.
4. The test is taken on a computer, and test-takers are provided with scratch paper or a small whiteboard for notes.
5. The Quantitative Reasoning section includes an on-screen calculator.
6. There are no breaks during the test. Leaving your seat at any point will not stop the timer for the current section.

1. If $\frac{3}{5}x - 2 = 1$, what is x ?

- (A) 3
- (B) 4
- (C) 5
- (D) 6

2. What is the sum of the first 20 positive integers?

- (A) 190
- (B) 200
- (C) 210
- (D) 220

3. Solve for y : $y^2 - 9 = 0$.

- (A) $y = 3$
- (B) $y = -3$
- (C) $y = 0$
- (D) No solution

4. If $f(x) = x^3 - 4x + 1$, find $f(-2)$.

- (A) 3
- (B) 1
- (C) -1
- (D) 0

5. What is the volume of a rectangular prism with length 5 cm, width 3 cm, and height 4 cm?

- (A) 50 cm^3
- (B) 60 cm^3
- (C) 70 cm^3
- (D) 80 cm^3

6. Find the area of a trapezoid with bases of 6 cm and 10 cm, and height of 4 cm.

- (A) 24 cm^2
- (B) 28 cm^2
- (C) 32 cm^2
- (D) 36 cm^2

7. A dataset contains the numbers 4, 6, 8, 10, and 12. What is the mean?

- (A) 6
- (B) 7
- (C) 8
- (D) 9

8. In a survey, 70% of respondents preferred product A over product B. If 140 people preferred product A, how many people were surveyed in total?

- (A) 180
- (B) 190
- (C) 200
- (D) 210

9. Simplify the expression $4(x - 3) + 5$.

- (A) $4x - 6$
- (B) $4x - 7$
- (C) $4x - 8$
- (D) $4x + 7$

10. If x is inversely proportional to y and $x = 8$ when $y = 2$, what is x when $y = 4$?

- (A) 2
- (B) 4
- (C) 8

(D) 16

11. Solve for x if $3x + 2 = 14$.

(A) 2

(B) 4

(C) 6

(D) 8

12. A right triangle has legs of length 9 cm and 12 cm. What is the length of the hypotenuse?

(A) 12 cm

(B) 13 cm

(C) 14 cm

(D) 15 cm

1. If a car travels 300 miles in 5 hours, what is the average speed in miles per hour?

(A) 50 miles per hour

(B) 60 miles per hour

(C) 70 miles per hour

(D) 75 miles per hour

2. If $\frac{7}{4}x = 8$, what is x ?

(A) 6

(B) 10

(C) 12

(D) 14

3. What is the least common multiple (LCM) of 12 and 15?

(A) 30

(B) 45

(C) 60

(D) 90

4. Solve for x :

$$x^2 - 6x + 9 = 0$$

(A) $x = -3$

(B) $x = 3$

(C) $x = 0$

(D) $x = 6$

5. If

$$g(x) = 2x^2 - 5x + 3, \text{ find } g(2).$$

(A) 0

(B) 1

(C) -1

(D) 2

6. What is the area of a circle with a diameter of 10 cm?

(Use $\pi \approx 3.14$)

(A) 78.5 cm^2

(B) 50 cm^2

(C) 31.4 cm^2

(D) 25 cm^2

7. Find the surface area of a cube with side length 4 cm.

(A) 96 cm^2

(B) 64 cm^2

(C) 80 cm^2

(D) 100 cm^2

8. A dataset contains the numbers 12, 15, 18, 20, and 25. What is the range?

(A) 13

(B) 15

(C) 18

(D) 10

9. A company's sales increased from \$1,500,000 to \$2,000,000 in one year. What was the percentage increase?

(A) 25%

(B) 33.33%

(C) 40%

(D) 50%

10. Simplify the expression: $(3x - 2)(2x + 5)$

Solution: Use the distributive property (FOIL method):

$$(3x - 2)(2x + 5) = 3x \cdot 2x + 3x \cdot 5 - 2 \cdot 2x - 2 \cdot 5$$

Simplify the terms:

$$= 6x^2 + 15x - 4x - 10$$

Combine like terms:

$$= 6x^2 + 11x - 10$$

Final Answer: $6x^2 + 11x - 10$

11. Solve for z if $4z - 7 = 3z + 5$.

Solution: Subtract $3z$ from both sides:

$$4z - 7 - 3z = 3z + 5 - 3z$$

$$z - 7 = 5$$

Next, add 7 to both sides:

$$z - 7 + 7 = 5 + 7$$

$$z = 12$$

Final Answer: $z = 12$

12. What is the value of x in the equation $2(x + 3) = 5x - 4$?

Solution: Distribute the 2 and then solve for x :

$$2(x + 3) = 5x - 4$$

$$2x + 6 = 5x - 4$$

Next, move terms with x to one side and constants to the other:

$$6 + 4 = 5x - 2x$$

$$10 = 3x$$

Now, divide by 3:

$$x = \frac{10}{3}$$

Final Answer: $x = \frac{10}{3}$

13. If the probability of an event occurring is 0.25, what is the probability that the event does not occur?

Solution: The probability of an event not occurring is given by:

$$1 - (\text{probability of the event occurring})$$

Substitute the given probability:

$$1 - 0.25 = 0.75$$

Final Answer: 0.75

14. Find the median of the dataset: 8, 12, 15, 22, 26, 29.

Solution: The median is the middle value in an ordered list. For an even number of values, it is the average of the two middle values. First, arrange the numbers in order:

$$8, 12, 15, 22, 26, 29$$

The two middle values are 15 and 22. Now, calculate the average:

$$\frac{15 + 22}{2} = 18.5$$

Final Answer: 18.5

15. What is the standard deviation of the dataset: 3, 7, 7, 8, 10, 15?

Solution: To find the standard deviation, follow these steps:

Step 1: Find the mean:

$$\frac{3 + 7 + 7 + 8 + 10 + 15}{6} = 8.33$$

Step 2: Calculate each value's deviation from the mean, square it, and sum the squared deviations:

$$\text{Variance} = \frac{(3 - 8.33)^2 + (7 - 8.33)^2 + (7 - 8.33)^2 + (8 - 8.33)^2 + (10 - 8.33)^2 + (15 - 8.33)^2}{6}$$

$$= \frac{28.69 + 1.77 + 1.77 + 0.11 + 2.77 + 43.36}{6} = 13.0$$

Step 3: Take the square root of the variance:

$$\text{Standard Deviation} = \sqrt{13.08} \approx 3.62$$

Final Answer: Approximately 3.62