

Foundations of Pre-Calculus

Mathematics · Practice Test · 10 Questions

1. What is the value of the slope of a line represented by the equation $y = 3x + 5$?

- A) 3
- B) 5
- C) 8
- D) 15

2. In a right-angled triangle, which trigonometric ratio represents the ratio of the opposite side to the hypotenuse?

- A) Cosine
- B) Tangent
- C) Sine
- D) Secant

3. What is the domain of the function $f(x) = 1/x$?

- A) All real numbers
- B) All positive numbers
- C) All real numbers except 0
- D) All integers

4. What is the result of $(x + 3)(x - 3)$?

- A) $x^2 + 9$
- B) $x^2 - 6x + 9$
- C) $x^2 - 9$
- D) $x^2 + 6x - 9$

5. Which term describes the horizontal shift of the graph of $f(x) = (x - h)^2$?

- A) Vertical shift
- B) Horizontal shift by h
- C) Reflection
- D) Stretch factor

6. What is the sum of the first 5 terms of the arithmetic sequence 2, 5, 8, 11, 14?

- A) 30
- B) 40
- C) 45
- D) 50

7. Which of the following functions represents an exponential decay?

- A) $f(x) = 2^x$
- B) $f(x) = 0.5^x$
- C) $f(x) = x^2$
- D) $f(x) = 3x + 1$

8. The value of $\sin(90^\circ)$ is equal to:

- A) 0
- B) 0.5
- C) 1
- D) -1

9. What is the vertex of the parabola defined by $y = (x - 2)^2 + 3$?

- A) (-2, 3)
- B) (2, -3)
- C) (2, 3)
- D) (3, 2)

10. How many radians are equivalent to 180 degrees?

- A) $\pi/2$
- B) π
- C) 2π
- D) $3\pi/2$