

Foundations of Pre-Calculus

Mathematics · Answer Key · 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) $3\pi/2$