

Introduction to Pre-Calculus Foundations

Mathematics · Answer Key · 18 Questions

1. In a Cartesian coordinate system, what is the term for the horizontal axis?

- A) Y-axis
- B) X-axis**
- C) Z-axis
- D) Origin

2. Which function relates the angle of a right triangle to the ratio of the opposite side over the hypotenuse?

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

3. What is the value of any non-zero number raised to the power of zero?

- A) 0
- B) 1**
- C) The number itself
- D) Undefined

4. A line that approaches a curve but never touches it is called a what?

- A) Tangent
- B) Secant
- C) Asymptote**
- D) Vector

5. What is the sum of the interior angles of a triangle in Euclidean geometry?

- A) 90 degrees
- B) 180 degrees**
- C) 270 degrees
- D) 360 degrees

6. Which of these represents a point where a graph crosses the x-axis?

- A) Y-intercept
- B) Slope
- C) X-intercept**
- D) Vertex

7. In the equation $y = mx + b$, what does the letter 'm' represent?

- A) Slope
- B) Y-intercept
- C) Constant
- D) Variable

8. What is the formal name for the set of all possible input values for a function?

- A) Range
- B) Codomain
- C) Domain
- D) Limit

9. Which mathematical constant is approximately equal to 3.14159?

- A) e
- B) phi
- C) i
- D) pi

10. What is the result of multiplying a number by its reciprocal?

- A) 0
- B) 1
- C) -1
- D) The number itself

11. A polygon with eight sides is known as what?

- A) Hexagon
- B) Heptagon
- C) Octagon
- D) Nonagon

12. Which type of function produces a 'U' shaped graph called a parabola?

- A) Linear
- B) Quadratic
- C) Cubic
- D) Exponential

13. What is the slope of a horizontal line?

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

14. In trigonometry, what is the ratio of the adjacent side to the hypotenuse?

- A) Sine
- B) Cosine**
- C) Tangent
- D) Cotangent

15. What is the process of finding the slope of a tangent line to a curve?

- A) Differentiation**
- B) Integration
- C) Addition
- D) Factorization

16. How many degrees are in a full circle?

- A) 90
- B) 180
- C) 270
- D) 360**

17. Which term describes a function that never decreases as the input increases?

- A) Decreasing
- B) Monotonic**
- C) Constant
- D) Periodic

18. What is the square root of 144?

- A) 10
- B) 11
- C) 12**
- D) 14