Coordinate Geometry Quiz Answer Key PDF

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What is the slope of the line passing through the points (1, 2) and (3, 6)?

A. 1

B. 2 ✓

C. 3

D. 4

Which points are 5 units apart? (Select all that apply)

A. (0, 0) and (3, 4) ✓

B. (1, 1) and (4, 5) ✓

C. (2, 2) and (6, 6)

D. (3, 3) and (6, 7)

Which of the following are true about the Cartesian plane? (Select all that apply)

A. It has four quadrants ✓

B. The origin is at (0, 0) ✓

C. The x-axis is vertical

D. The y-axis is horizontal

Describe a real-world scenario where you might need to use the distance formula in coordinate geometry.

Calculating the distance between two GPS coordinates to determine the shortest path between two locations.

Which of the following lines have a slope of 1? (Select all that apply)

A. y = x + 2 ✓

B. y = 2x + 1

C. y = x - 3 ✓

D. y = -x + 1

Which equations represent lines with a slope of 2? (Select all that apply)

A. y = 2x + 3 ✓

B. y = -2x + 5

C. y - 1 = 2(x - 3) ✓

D. 2x - y = 0 ✓

Explain how the four quadrants of the Cartesian plane are labeled and what distinguishes each quadrant.

Quadrant I: (+, +), Quadrant II: (-, +), Quadrant III: (-, -), Quadrant IV: (+, -). Each quadrant is distinguished by the signs of the x and y coordinates.

How would you convert the standard form of a line equation Ax + By = C to the slope-intercept form y = mx + b?

Solve for y by isolating it on one side: y = -A/Bx + C/B.

How can the midpoint formula be used to find the center of a rectangle given its opposite corners?

To find the center of a rectangle given its opposite corners (x1, y1) and (x2, y2), use the midpoint formula: Center = ((x1 + x2)/2, (y1 + y2)/2).

Discuss the differences between a parabola, an ellipse, and a hyperbola in terms of their equations and graphs.

The equation of a parabola is typically in the form y = ax^2 + bx + c, resulting in a U-shaped graph. An ellipse is represented by the equation $(x-h)^2/a^2 + (y-k)^2/b^2 = 1$, producing a closed oval shape, while a hyperbola is defined by $(x-h)^2/a^2 - (y-k)^2/b^2 = 1$, resulting in two separate curves that open away from each other.

Which of the following is a conic section?

A. Triangle

B. Square
C. Parabola ✓
D. Pentagon

If two lines are parallel, what can be said about their slopes?

A. They are equal ✓
B. They are negative reciprocals
C. They are zero
D. They are undefined

What is the midpoint of the line segment joining (2, 3) and (4, 7)?

A. (3, 5) ✓
B. (3, 4)
C. (2, 5)
D. (4, 5)

What is the point of intersection of the x-axis and y-axis called?

A. Vertex
B. Origin ✓
C. Midpoint
D. Center

What is the radius of a circle with the equation (x - 3)^2 + (y + 4)^2 = 25?

A. 3
B. 4
C. 5 ✓
D. 6

Which of the following is the slope-intercept form of a line?

A. Ax + By = C
B. y = mx + b ✓
C. y - y1 = m(x - x1)

D. x^2 + y^2 = r^2

What is the distance between the points (3, 4) and (7, 1)?

A. 5 ✓
B. 6
C. 7
D. 8

Explain the significance of the slope of a line in real-world applications, such as in road construction or architecture.

The slope of a line is significant in road construction and architecture as it indicates the steepness of roads and the angles of structures, which are essential for ensuring safety, proper drainage, and structural integrity.

Which of the following pairs of lines are perpendicular? (Select all that apply)

A. y = 2x + 1 and y = -1/2x + 3 ✓
B. y = 3x + 4 and y = -1/3x - 2 ✓
C. y = x + 5 and y = -x + 1
D. y = 4x - 1 and y = 1/4x + 2

Which of the following are equations of circles? (Select all that apply)

A. (x - 1)^2 + (y + 2)^2 = 9 ✓
B. x^2 + y^2 = 16 ✓
C. x^2 - y^2 = 25
D. (x + 3)^2 + (y - 4)^2 = 0