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Slope of a Line Quiz Answer Key PDF

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Describe the relationship between the slopes of two perpendicular lines.

If the slope of one line is m, the slope of the perpendicular line is -1/m.

Explain how to determine the slope of a line given two points on the line.

The slope of the line can be calculated using the formula: slope = (y2 - y1) / (x2 - x1).

If a line has an undefined slope, which of the following is true?

A. The line is horizontal.

B. The line is vertical. ✓

C. The line has a positive slope.

D. The line has a negative slope.

Explain why a vertical line has an undefined slope.

The slope of a vertical line is undefined because the change in x (the denominator) is zero, and division by zero is undefined in mathematics.

Which of the following represent a line with an undefined slope?

A. x = 4 ✓

B. y = 4

C. x = -2 ✓

D. y = -2

What is the slope of the line represented by the equation y = -3x + 4?

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A. -3 ✓

B. 3

C. 4

D. -4

Provide a real-world example where understanding the slope of a line is useful.

A real-world example is in economics, where the slope of a cost function indicates the marginal cost of production, helping businesses make informed decisions about scaling production.

What is the slope of a line parallel to the line y = 1/2x - 3?

A. 1/2 ✓

B. -2

C. 2

D. -1/2

Which of the following lines has a zero slope?

A. x = 5

B. y = 5 ✓

C. y = 2x + 3

D. x = -3

What is the slope of a line that passes through the points (2, 3) and (4, 7)?

A. 2 ✓

B. 3

C. 4

D. 5

Which of the following points lie on the line with the equation y = 2x + 3?

A. (0, 3) ✓

B. (1, 5) ✓

C. (2, 7) ✓

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D. (3, 9) ✓

What are the characteristics of a line with a negative slope?

A. The line rises from left to right.

B. The line falls from left to right. ✓

C. The line is horizontal.

D. The line is vertical.

What is the slope of a line that passes through the origin and the point (3, 9)?

A. 1

B. 2

C. 3 ✓

D. 4

Which line is perpendicular to the line y = 4x + 1?

A. y = -1/4x + 2 ✓

B. y = 4x - 3

C. y = 1/4x + 5

D. y = -4x + 6

If two lines are parallel, which of the following statements are true?

A. They have the same slope. ✓

B. They intersect at one point.

C. They never intersect. ✓

D. Their slopes are negative reciprocals.

Which of the following equations has a slope of 0?

A. y = 5 ✓

B. x = 5

C. y = 2x + 5

D. x = 2y + 5

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Which of the following equations represent lines with a positive slope?

A. y = -2x + 1

B. y = 3x - 4 ✓

C. y = 1/2x + 5 ✓

D. y = -x + 2

How does the slope of a line affect its appearance on a graph?

The slope of a line affects its appearance by determining how steep the line is and whether it rises or falls as it moves from left to right.

Discuss the significance of the slope-intercept form of a linear equation and how it can be used to graph a line.

The slope-intercept form of a linear equation is y = mx + b, where m is the slope and b is the y-intercept. This form is significant because it allows for easy identification of the line's steepness and where it crosses the y-axis, facilitating straightforward graph plotting.

What are the possible slopes of a horizontal line?

A. 0 ✓

B. Undefined

C. Positive

D. Negative

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