

Finding Slope Worksheet Answer Key PDF

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Part 1: Building a Foundation

What is the formula for calculating the slope of a line given two points (X1, Y1) and (X2, Y2)?

undefined. $(X2 - X1) / (Y2 - Y1)$

undefined. **$(Y2 - Y1) / (X2 - X1)$ ✓**

undefined. $(Y1 - Y2) / (X1 - X2)$

undefined. $(X1 - X2) / (Y1 - Y2)$

The correct formula for calculating slope is $(Y2 - Y1) / (X2 - X1)$.

Which of the following are types of slopes?

undefined. **Positive Slope ✓**

undefined. **Negative Slope ✓**

undefined. **Zero Slope ✓**

undefined. **Infinite Slope ✓**

The types of slopes include positive, negative, zero, and infinite slopes.

Explain what a zero slope indicates about the orientation of a line on a graph.

A zero slope indicates that the line is horizontal and does not change in the y-value as x changes.

List the components of the slope-intercept form of a linear equation.

1. What is 'm'?

The slope of the line.

2. What is 'x'?

The independent variable.

3. What is 'y'?

The dependent variable.

4. What is 'c'?

The y-intercept.

The slope-intercept form is $y = mx + b$, where m is the slope and b is the y-intercept.

What does an undefined slope indicate about a line?

undefined. The line is horizontal.

undefined. The line is vertical. ✓

undefined. The line has a positive incline.

undefined. The line has a negative incline.

An undefined slope indicates that the line is vertical.

Part 2: Comprehension and Application

If a line has a positive slope, what can be said about its direction on a graph?

undefined. It falls from left to right.

undefined. It rises from left to right. ✓

undefined. It remains constant.

undefined. It is vertical.

A line with a positive slope rises from left to right.

Which of the following equations represent a line with a negative slope?

undefined. $y = -3x + 2$ ✓

undefined. $y = 4x - 5$

undefined. $y = -x + 7$ ✓

undefined. $y = 2$

Equations with negative slopes have a negative coefficient for x .

Describe how the slope of a line affects its steepness on a graph.

The slope of a line determines its steepness; a larger slope value indicates a steeper line.

Given the points (2, 3) and (4, 7), what is the slope of the line passing through these points?

undefined. 2 ✓

undefined. 1

undefined. 3

undefined. 4

The slope is calculated as $(7 - 3) / (4 - 2) = 2$.

Which of the following lines are parallel to the line with the equation $y = 2x + 3$?

undefined. $y = 2x - 1$ ✓

undefined. $y = -2x + 5$

undefined. $y = 2x + 7$ ✓

undefined. $y = 3x + 2$

Parallel lines have the same slope, which is 2 in this case.

Calculate the slope of a line that passes through the points (5, 10) and (10, 20), and explain the process.

The slope is calculated as $(20 - 10) / (10 - 5) = 2$, showing a consistent increase.

Part 3: Analysis, Evaluation, and Creation

If two lines have slopes of $1/2$ and -2 , what can be said about their relationship?

undefined. They are parallel.

undefined. They are perpendicular. ✓

undefined. They are identical.

undefined. They intersect but are not perpendicular.

The lines are perpendicular because the product of their slopes is -1 .

Which of the following scenarios would result in an undefined slope?

undefined. A car moving on a flat road.

undefined. A ladder leaning against a wall.

undefined. A vertical cliff face. ✓

undefined. A gentle hill slope.

An undefined slope occurs in vertical lines, such as a vertical cliff face.

Analyze how changing the slope in the equation $y = mx + b$ affects the graph of the line.

Changing the slope alters the steepness and direction of the line on the graph.

Which line equation would best model a scenario where a constant rate of change is observed?

undefined. $y = x^2 + 3$

undefined. $y = 5x + 2$ ✓

undefined. $y = 3/x$

undefined. $y = x^3 - 4$

The equation $y = 5x + 2$ represents a constant rate of change.

Evaluate which of the following lines could represent real-world situations with a negative rate of change.

undefined. $y = -0.5x + 10$ ✓

undefined. $y = 2x - 3$

undefined. $y = -3x + 15$ ✓

undefined. $y = 4x + 1$

Lines with negative slopes indicate a decrease in value, such as $y = -0.5x + 10$.

Create a real-world problem that involves calculating the slope of a line, and solve it. Include all necessary steps and explanations.

A real-world problem could involve calculating the slope of a hill based on its rise and run.