

Find and Understand Slope

Learning Objectives

- Find the slope of a line given two points
 - Understand the relationship between the slope and y-intercept of a line and its equation
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Find the slope of a line given two points

1. Find the slope of the line connecting the points $(1,7)$ and $(4,-2)$.

Understand the relationship between the slope and y-intercept of a line and its equation

2. A line is given by the equation $y = 6 - \frac{1}{3}x$. Find the slope and the y-intercept.

- The slope-intercept form of a line is $y = mx + b$.
- When a linear equation is solved for y , the slope is the coefficient of the x term (including the sign), and the constant is the y -intercept (as a coordinate point $(0,b)$).
- If there is no x term, the slope is zero and the line is horizontal.
- If there is no constant, the y -intercept is the origin $(0,0)$.
- If there is no y term in the equation to solve for, the slope is undefined and the line is vertical.

ANSWER KEY

1. $m = -3$

2. $m = -\frac{1}{3}$, y-intercept is (0,6)