



Objective 3 TEKS A.6.A Review

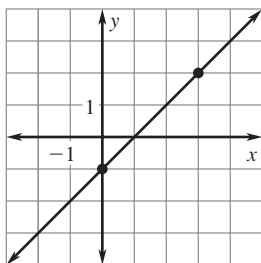
A.6.A Develop the concept of slope as rate of change and determine slopes from graphs, tables, and algebraic representations.

The slope of a line represents the rate of change between two variables.

Equation of line	Slope of line	Rate of change
$y = -2x + 15$	$-\frac{2}{1}$	As x increases by 1, y decreases by 2.
$d = \frac{15}{2}t$	$\frac{15}{2}$	As t increases by 2, d increases by 15.

You can use the formula $m = \frac{y_2 - y_1}{x_2 - x_1}$ to find the slope m of a line whose graph passes through the points (x_1, y_1) and (x_2, y_2) .

EXAMPLE What is the slope of the line whose graph is shown?



The graph contains the points $(0, -1)$ and $(3, 2)$.

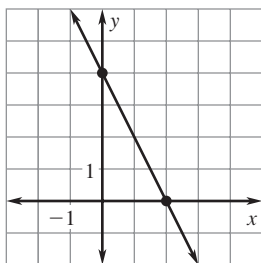
Use the formula $m = \frac{y_2 - y_1}{x_2 - x_1}$.

Let $(0, -1) = (x_1, y_1)$ and let $(3, 2) = (x_2, y_2)$.

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{2 - (-1)}{3 - 0} = \frac{3}{3} = 1$$

The slope of the line is 1.

YOU DO IT What is the rate of change between x and y for the linear function whose graph is shown?



The graph contains the points $(\underline{0}, \underline{4})$ and $(\underline{2}, \underline{0})$.

Let $(0, \underline{4}) = (x_1, y_1)$ and let

$(\underline{2}, \underline{0}) = (x_2, y_2)$.

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{\boxed{4} - \boxed{0}}{\boxed{0} - \boxed{2}} = \frac{\boxed{4}}{\boxed{-2}} = \underline{-2}$$

What is the slope of the linear function whose graph is shown?

The slope is -2

What does the slope of the line tell you about the rate of change between x and y ?

As **x** increases by 1, y **decreases** by **2**.