

Lesson 2 Reteach

Slope

The slope m of a line passing through points (x_1, y_1) and (x_2, y_2) is the ratio of the difference in the y -coordinates to the corresponding difference in the x -coordinates. As an equation, the slope is given by

$$m = \frac{y_2 - y_1}{x_2 - x_1}, \text{ where } x_1 \neq x_2.$$

Example 1 Find the slope of the line that passes through $A(-1, -1)$ and $B(2, 3)$.

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Slope formula

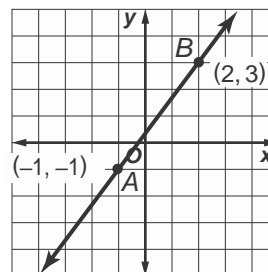
$$(x_1, y_1) = (-1, -1),$$

$$(x_2, y_2) = (2, 3)$$

$$m = \frac{3 - (-1)}{2 - (-1)}$$

$$m = \frac{4}{3}$$

Simplify.



Check

When going from left to right, the graph of the line slants upward. This is correct for a positive slope.

Example 2 Find the slope of the line that passes through $C(1, 4)$ and $D(3, -2)$.

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Slope formula

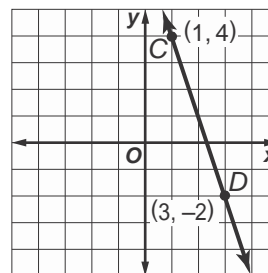
$$(x_1, y_1) = (1, 4),$$

$$(x_2, y_2) = (3, -2)$$

$$m = \frac{-2 - 4}{3 - 1}$$

$$m = \frac{-6}{2} \text{ or } -3$$

Simplify.



Check

When going from left to right, the graph of the line slants downward. This is correct for a negative slope.

Exercises

Find the slope of the line that passes through each pair of points.

1. $A(0, 1), B(3, 4)$

2. $C(1, -2), D(3, 2)$

3. $E(4, -4), F(2, 2)$

4. $G(3, 1), H(6, 3)$

5. $I(4, 3), J(2, 4)$

6. $K(-4, 4), L(5, 4)$