

## Do Now

Pick 2 points from the table below and find the slope \*\*using the slope formula\*\*

x	y
-4	-5
-2	-2
0	1
2	4
4	7

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

$(2, 4)$  and  $(4, 7)$   
 $x_1, y_1$        $x_2, y_2$

$$= \frac{7 - 4}{4 - 2} = \frac{3}{2}$$

$$= \frac{4 - 7}{2 - 4} = \frac{-3}{-2} = \frac{3}{2}$$

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## Homework Answers

1)  $m = \frac{1}{3}$

2)  $m = -4$

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

4)  $m = -2$

5)  $m = \frac{-1}{3}$

$(x, y)$   
 ~~$(y, x)$~~

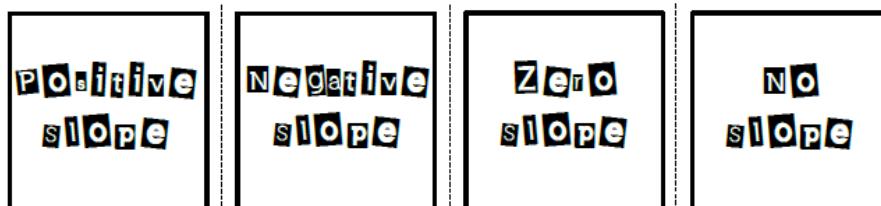
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## Slope Formula

$$\text{slope (m)} = \frac{y_2 - y_1}{x_2 - x_1} \longrightarrow \begin{array}{l} \text{always } y \text{ minus } y \\ \text{always } x \text{ minus } x \end{array}$$

$$\begin{array}{cc} (1, 2) & (3, 4) \\ x_1, y_1 & x_2, y_2 \end{array}$$

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Example 1: Find the slope of the line shown below.

$\frac{\text{Rise}}{\text{Run}} = \frac{4}{2} = 2$

Example 2: Find the slope of the line that passes through the points below.

(5,2) and (4,-1)

$x_1, y_1 \quad x_2, y_2$

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

$m = \frac{-1 - 2}{4 - 5}$

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

$m = 3$

Example 3: Find the slope of the line shown below.

$\frac{\text{Rise}}{\text{Run}} = \frac{-3}{2}$

Example 4: Find the slope of the line that passes through the points below.

(0,6) and (5,-4)

$x_1, y_1 \quad x_2, y_2$

$\frac{y_2 - y_1}{x_2 - x_1} = \frac{-4 - 6}{5 - 0}$

$\frac{-10}{5} = -2$

Example 5: Find the slope of the line shown below.

$\frac{\text{Rise}}{\text{Run}} = \frac{0}{5} = 0$  zero slope

Example 6: Find the slope of the line that passes through the points below.

(0,4) and (-3,4)

$\frac{y_2 - y_1}{x_2 - x_1} = \frac{4 - 4}{-3 - 0}$

$\frac{0}{-3} = 0$

(Zero) 0 Slope

Example 7: Find the slope of the line shown below.

$\frac{\text{Rise}}{\text{Run}} = \frac{5}{0}$  Undefined No Slope

Example 8: Find the slope of the line that passes through the points below.

(5,2) and (5,-2)

$\frac{y_2 - y_1}{x_2 - x_1} = \frac{-2 - 2}{5 - 5}$

$\frac{-4}{0} = \text{Undefined}$

No Slope

slope