

Algebra Slope Day 2

Warm-Up

Simplify numbers 1-4.

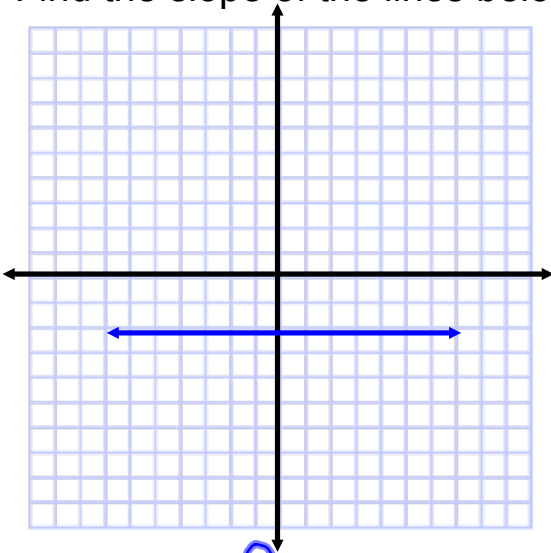
$$1. \frac{9-5}{8-3} = \frac{4}{5}$$

$$2. \frac{5-9}{3-8} = \frac{-4}{-5} = \frac{4}{5}$$

$$3. \frac{6+8}{-2-(-4)} = \frac{14}{-2+4} = \frac{14}{2} = 7$$

$$4. \frac{-8-6}{-4-(-2)} = \frac{-14}{-4+2} = \frac{-14}{-2} = 7$$

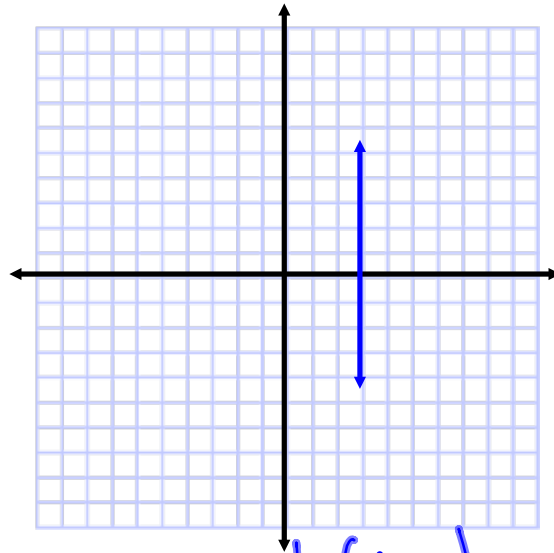
Find the slope of the lines below.



Slope = 0

Slope of ~~Vertical~~ lines = 0

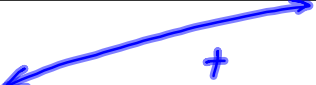
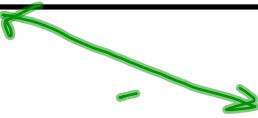
horizontal



Slope = undefined

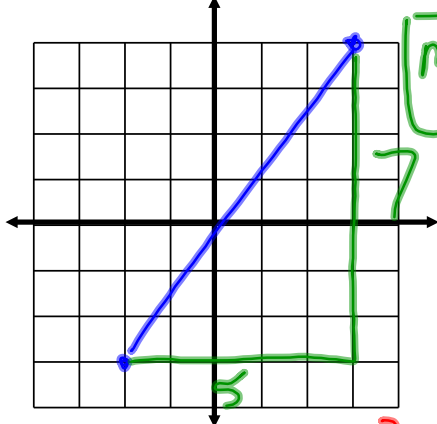
Slope of ~~Horizontal~~ lines = undefined

vertical

Vocab	Definition	Example
Slope (x_1, y_1) (x_2, y_2)	<ul style="list-style-type: none"> • Represented by <u>m</u> • <u>how steep a line is</u> • <u>$\frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1} = m$</u> 	$(2, 1)$ $(-3, 4)$ $x_1 \ y_1$ $x_2 \ y_2$ $m = \frac{4 - 1}{-3 - 2} = \boxed{\frac{3}{-5}}$
Positive Slope	<ul style="list-style-type: none"> • goes up from left to right 	
Negative Slope	<ul style="list-style-type: none"> • goes down from left to right 	

Examples

Find the slope of a line that contains the following points.

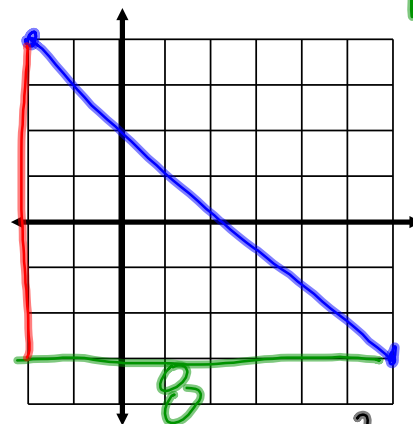


$$m = \frac{7}{5}$$

7

$$\frac{7}{5}$$

$$1. (3, 4) \text{ \& } (-2, -3) \quad m = \frac{-3 - 4}{-2 - 3} = \frac{-7}{-5} = \frac{7}{5}$$

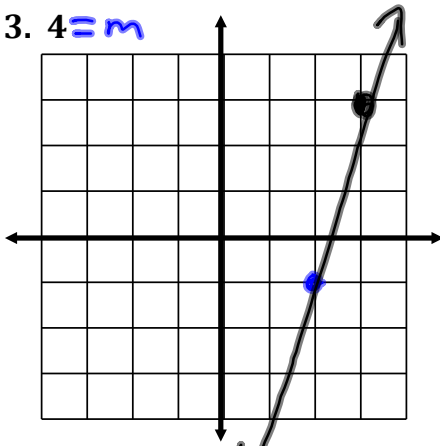


$$m = \frac{\text{rise}}{\text{run}} = \frac{-7}{8}$$

$$2. (-2, 4) \text{ \& } (6, -3) \quad m = \frac{-3 - 4}{6 - (-2)} = \frac{-7}{8}$$

For numbers 3-4, graph a line through (2, -1) with a slope of...

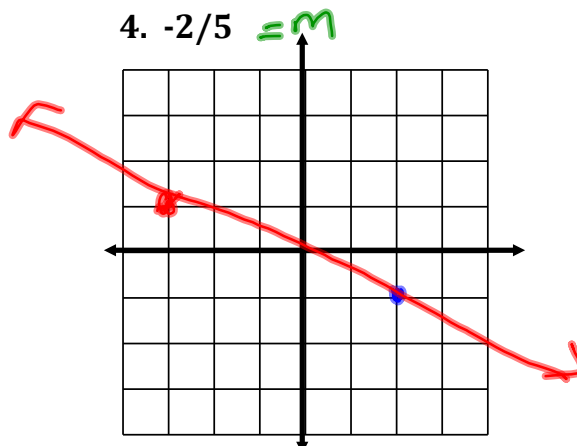
3. $4 = m$



$$m = \frac{4}{1} \quad \frac{\text{up } 4}{\text{right } 1}$$

$$m = \frac{\uparrow}{\rightarrow} = \frac{-\downarrow}{\leftarrow}$$

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



$$m = \frac{-2}{5} \quad \frac{\text{down } 2}{\text{right } 5}$$

$$m = \frac{2}{-5} \quad \frac{\text{up } 2}{\text{left}}$$

Find the slope of the line that contains the following points.

5. $(-2, 6)$ & $(6, -4)$

$$x_1 \ y_1 \quad x_2 \ y_2$$

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

$$= \frac{-4 - 6}{6 - (-2)} = \frac{-10}{8}$$

$$= \boxed{\frac{-5}{4}}$$

6. $(-2, -3)$ & $(-5, -5)$

$$x_1 \ y_1 \quad x_2 \ y_2$$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-5 - (-3)}{-5 - (-2)} = \frac{-2}{-3}$$

$$\boxed{\frac{2}{3}}$$

Assign 7-2
1-21, skip 4