Do Now:

1. Sketch an example of the type of line described.
   a. A line with zero slope
   b. A line with undefined slope
   c. A line with positive slope
   d. A line with negative slope

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

2. Find the slope of the line.
   a. (3 , 3) and (5 , 7)
   b. (-5 , 1) and (2 , -2)
   c. (-6 , 2) and (4 , 2)
   d. (-6 , 4) and (-6 , -4)

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

a. 2 b. $\frac{3}{-7}$

c. 0 d. undefined

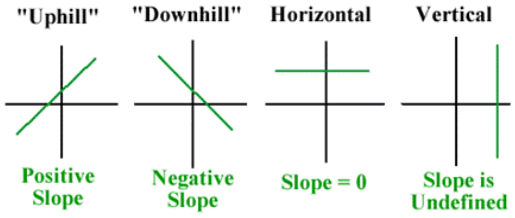
8.4 The Slope of a Line

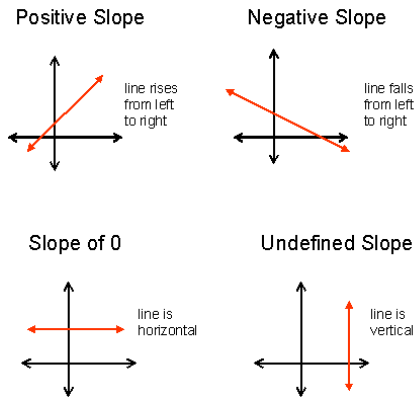
8.F

- SWBAT find and interpret slopes of lines.
- SWBAT create representations to communicate mathematical ideas.

Calculators: No

slope- the ratio of a line's vertical change (rise) to its horizontal change (run)





$$slope = \frac{rise}{run} = \frac{difference\ in\ y-coordinates}{difference\ in\ x-coordinates}$$

$\frac{\text{up or down}}{\text{left or right}}$

Given two coordinates

(x_1 , y_1) and (x_2 , y_2)

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

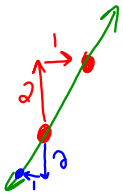
Find the slope of the line.

(3 , 3) and (5 , 7)

Graphing

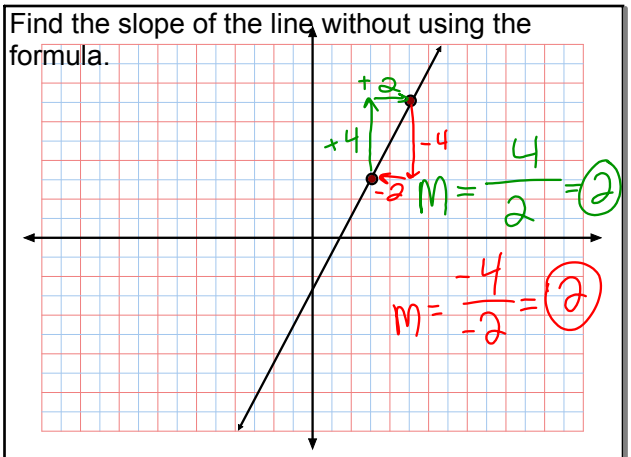
$m = 2$

$\frac{2}{1}$



up 2 / right 1 down 2 / left 1

Find the slope of the line without using the formula.



$m = \frac{4}{2} = 2$

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

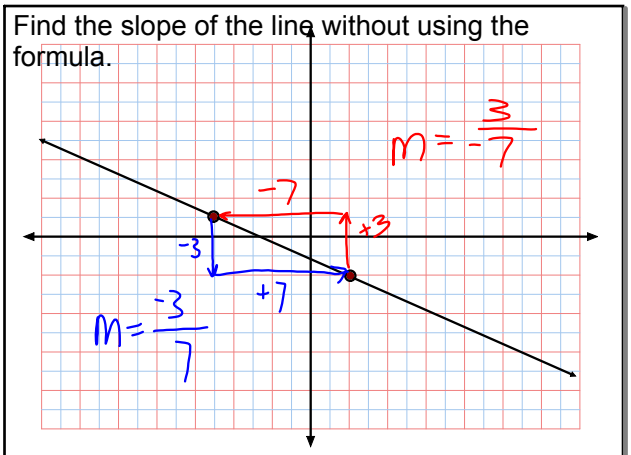
Find the slope of the line.

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

$m = \frac{3}{-7}$ up 3 / left 7

$m = \frac{-3}{7}$ down 3 / right 7

Find the slope of the line without using the formula.



$m = \frac{3}{-7}$

$m = \frac{-3}{7}$

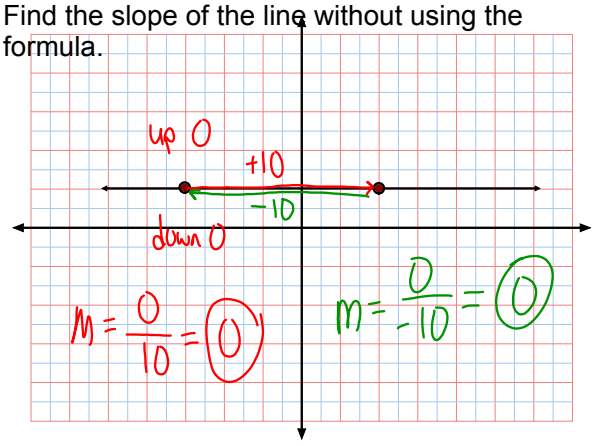
Find the slope of the line.

(-6 , 2) and (4 , 2)

$m = 0$ up zero / right # down zero / left #

$\frac{0}{\#}$

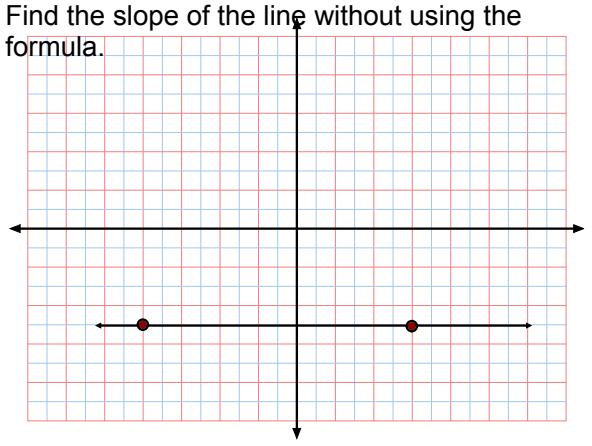
Find the slope of the line without using the formula.



Find the slope of the line.

(-8 , -5) and (6 , -5)

Find the slope of the line without using the formula.



Find the slope of the line.

(-6 , 4) and (-6 , -4)

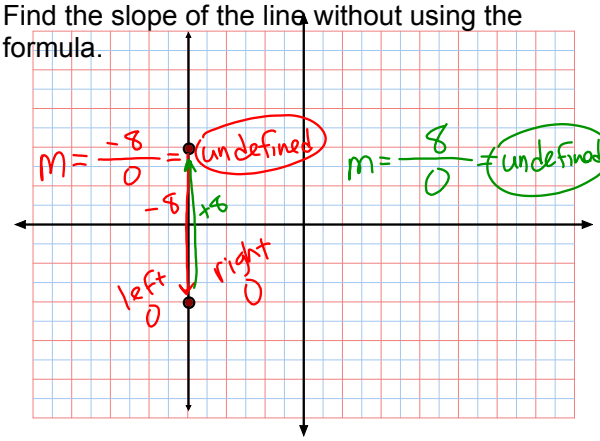
m = undefined

/ 0

up # / right 0

down # / left 0

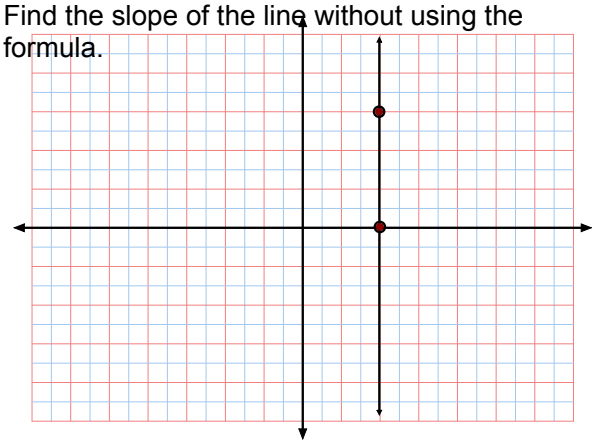
Find the slope of the line without using the formula.



Find the slope of the line.

(4 , 6) and (4 , 0)

Find the slope of the line without using the formula.



Find the coordinates of two points on the line with the given equation. Then use the points to find the slope of the line.

y = 2x + 4

slope

$y = 2(0)+4$ $y = 0+4$ $y = 4$

$y = 2(1)+4$ $y = 2+4$ $y = 6$

x	y	
0	4	(0, 4)
1	6	(1, 6)

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

$= \frac{6-4}{1-0} = \frac{2}{1} = 2$

Find the coordinates of two points on the line with the given equation. Then use the points to find the slope of the line.

y = -1

Horiz.

m = 0

x	y	
0	-1	(0, -1)
1	-1	(1, -1)

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

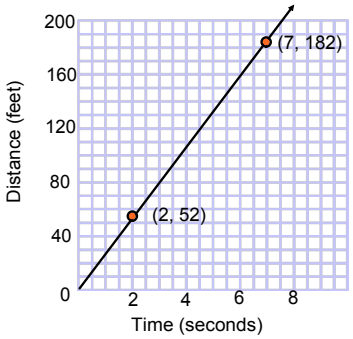
Find the coordinates of two points on the line with the given equation. Then use the points to find the slope of the line.

x + 2y = 6

Find the coordinates of two points on the line with the given equation. Then use the points to find the slope of the line.

x = 3

The graph shows the distance traveled by a wakeboarder as a function of time. Find the wakeboarder's speed.



a.) What information about the wakeboarder can you obtain from the slope?

b.) A sea monster's top speed is about 20 feet per second. Suppose you made a graph showing the distance traveled by a sea monster as a function of time. How would the graph for the sea monster compare with the graph for the wakeboarder? Explain your thinking.

"Don't blame the sea if you cannot catch a fish."

Working individually or with a partner, complete the workbook.

Workbook pg. 107 #1-5, 7, 8, 10-22 evens, 23

Reflection of Today's Lesson

8.4 The Slope of a Line

8.F

- SWBAT find and interpret slopes of lines.
- SWBAT create representations to communicate mathematical ideas.

Calculators: No

Homework

~~Finish workbook assignment~~

pg. 407 #11-16