

Algebra I

8-3 Slope

Slope - $m = \frac{\text{rise}}{\text{run}} = \frac{\text{change in } y}{\text{change in } x} = \frac{\text{change in output}}{\text{change in input}}$

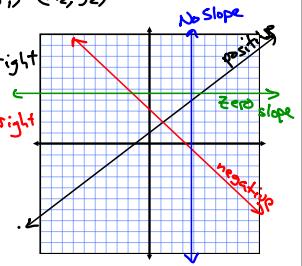
$$m = \frac{y_2 - y_1}{x_2 - x_1} \quad (x_1, y_1) \quad (x_2, y_2)$$

Positive Slope - uphill, left to right

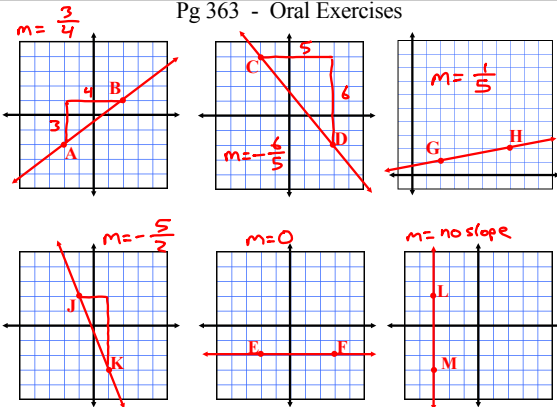
Negative Slope - downhill, left to right

Zero Slope - horizontal, $y =$

No Slope - vertical, $x =$



Pg 363 - Oral Exercises



Find the slope of the line through the given points. (pg 363)

1) $(8, 4)$ $(6, 5)$
 (x_2, y_2) (x_1, y_1)

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{5 - 4}{6 - 8} = -\frac{1}{2}$$

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

11) $(0, -3)$ $(3, -1)$
 (x_1, y_1) (x_2, y_2)

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

It doesn't matter which point is (x_1, y_1) and which is (x_2, y_2) as long as the sub 1s are together and the sub 2s are together.

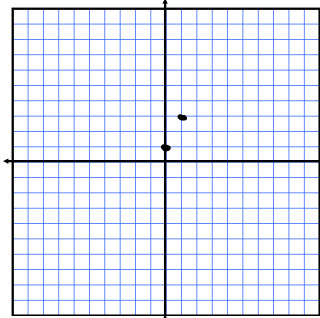
Find the slope of each line. If the line has no slope, say so.

13) $y = 2x + 1$

$$m = \frac{2}{1} = 2$$

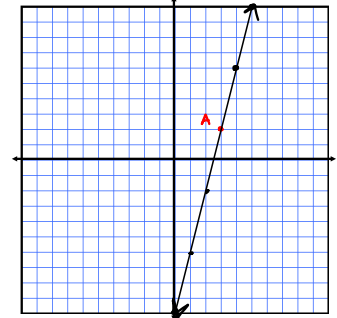
x	y
0	1
1	3

$y = 2(0) + 1$
 $y = 2(1) + 1$



Through the given point, draw a line with the given slope.

25) $A(3, 2)$; slope 4
 $m = \frac{4}{1}$



Assignment:

The Classic
8-3

Pg. 363

2-12 even

16, 17, 20, 22 }
23, 26, 28, 30 } Graph, 1 per graph