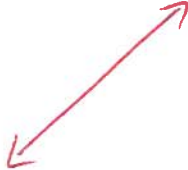





Name: Mr Sutcliffe

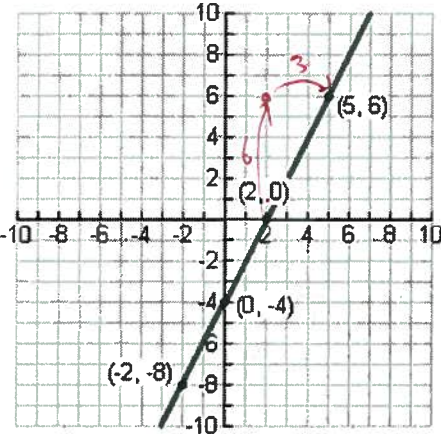
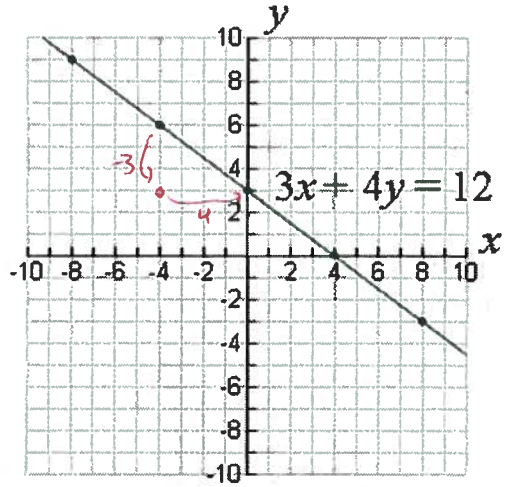
**Lesson 6.2 – Slope Review**

Definition of Slope = *steepness of a line*

Formula:  $\frac{\text{rise}}{\text{run}} = \frac{\text{change in } y\text{-value}}{\text{change in } x\text{-value}} = \frac{y_2 - y_1}{x_2 - x_1}$

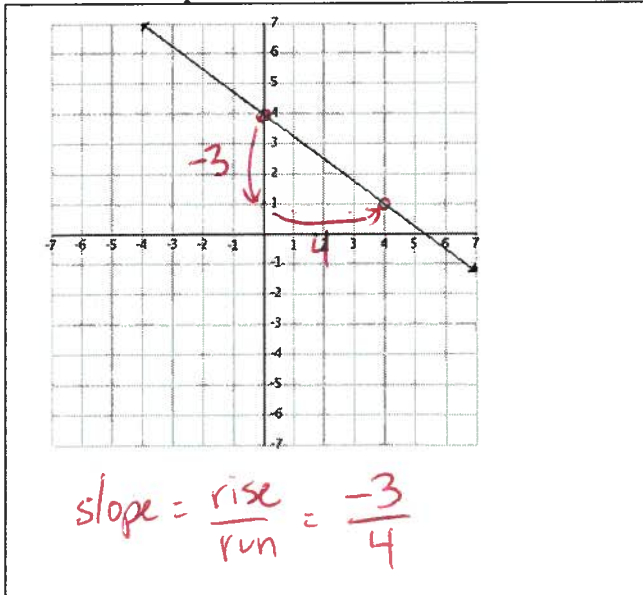
 Slope = Positive	 Slope = Negative	 Slope = 0	 Slope = undefined
-------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------

Examples:

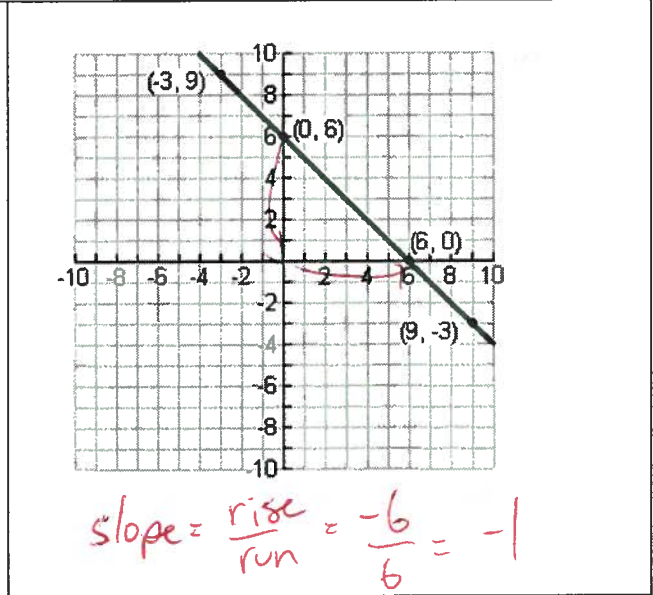
 <p><math>\frac{6}{3}</math> or <math>\frac{2}{1} = 2</math></p>	 <p><math>-\frac{3}{4}</math></p>
Graph that goes through $(-2, 5)$ and $(3, -1)$ $x_1 \ y_1 \quad x_2 \ y_2$ $\text{slope} = \frac{-1 - 5}{3 - (-2)} = \frac{-6}{5}$	Graph that goes through $(2, -4)$ and $(2, 7)$ $x_1 \ y_1 \quad x_2 \ y_2$ $\text{slope} = \frac{7 - (-4)}{2 - 2} = \frac{11}{0} = \text{undefined}$

**Assignment:**

Find the Slope:



$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{-3}{4}$$



$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{-6}{6} = -1$$

Graph that goes through (-2, -3) and (3, 7)

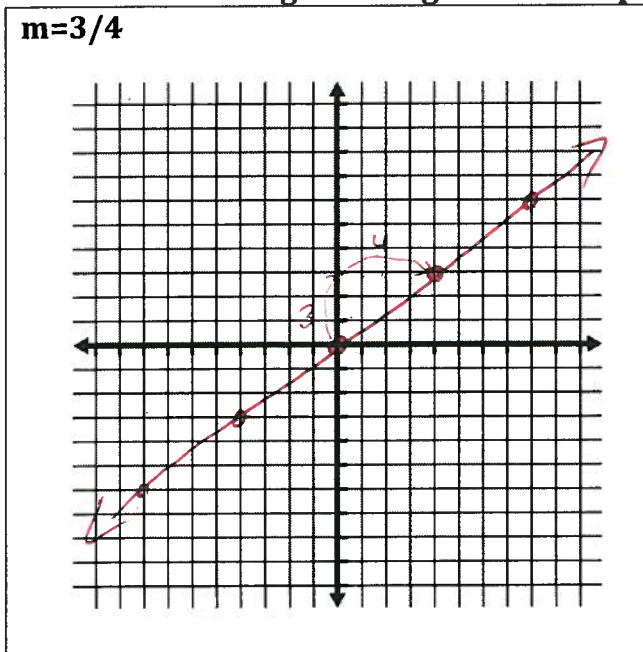
$$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{7 - (-3)}{3 - (-2)} = \frac{10}{5} = 2$$

Graph that goes through (5, -2) and (-1, -2)

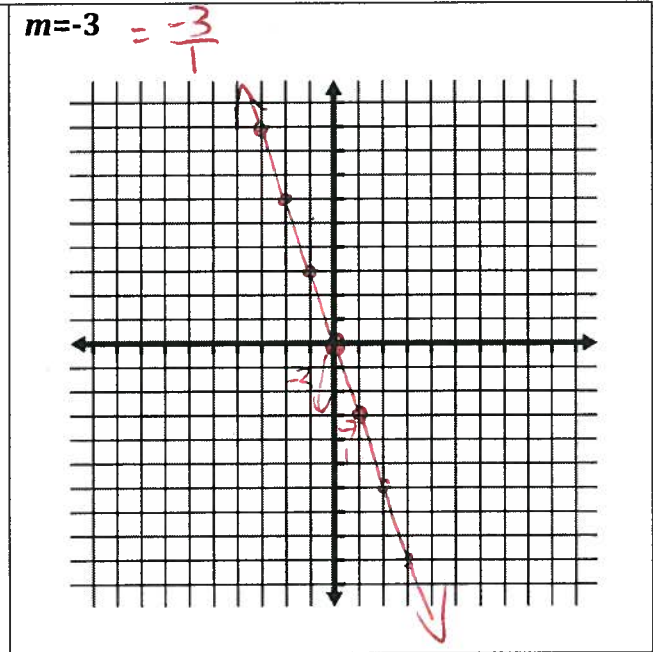
$$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-2 - (-2)}{-1 - 5} = \frac{0}{-6} = 0$$

Draw a line through the origin with a slope of...

$m = 3/4$



$m = -3$



**Slope-Intercept Form**

$$y = mx + b$$

$m = \text{slope}$   
 $b = \text{y-intercept}$

**Example:**

Linear Equation:	Slope	Y-Intercept
$y = \frac{2}{3}x + 2$	$\frac{2}{3}$	2
$y = -x - 5$	-1	-5

**Assignment:**

Linear Equation:	Slope	Y-Intercept
$y = 2x - 5$	2	-5
$y = x + 2$	1	2
$y = -\frac{1}{2}x + 3$	$-\frac{1}{2}$	3
$y = \frac{4}{3}x$	$\frac{4}{3}$	0
$y = 7$	0	7
$x = -2$	undefined	none
$y + 2 = 2x - 5 - 2$	2	-7
$\frac{2y}{2} = \frac{2x}{2} - \frac{5}{2}$	1	$-\frac{5}{2}$ or -2.5

**Graphing Method #2 – Using Slope**

STEP #1: Plot the y-intercept

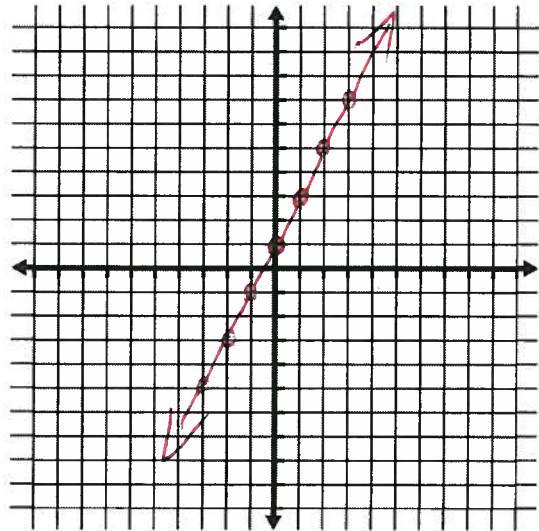
STEP #2: Use the slope to plot a second point

STEP #3: Draw a line through the points

**Examples**

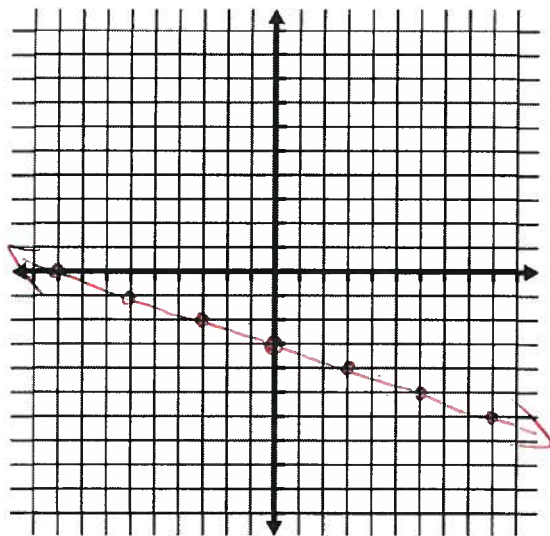
a)  $y = 2x + 1$

using  $y = mx + b$   
 y-intercept = 1  
 Slope = 2 =  $\frac{2}{1}$



b)  $y = -\frac{1}{3}x - 3$

y-int = -3  
 Slope =  $-\frac{1}{3}$

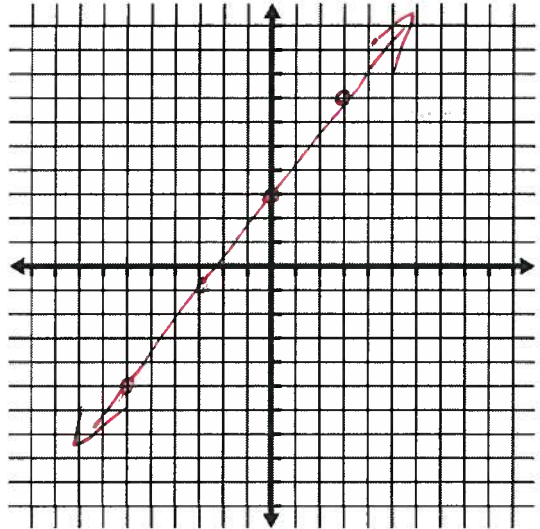


**Assignment:**

Graph each equation using the slope method. Show your work.

1)  $y = \frac{4}{3}x + 3$

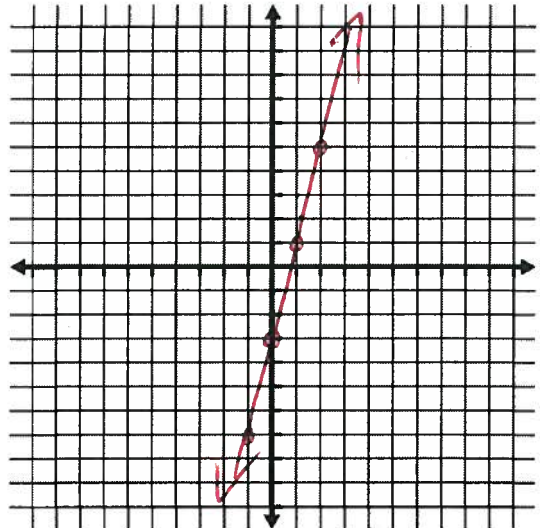
*y*int = 3  
slope =  $\frac{4}{3}$



2)  $y + 3 = 4x$

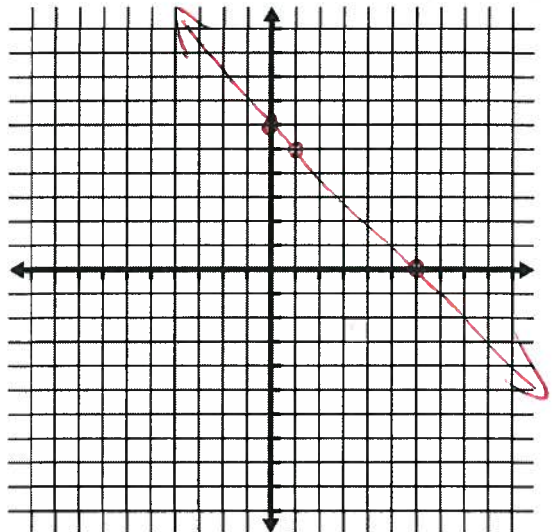
*y* = 4*x* - 3

*y*int = -3  
slope = 4 =  $\frac{4}{1}$



3)  $y = -x + 6$

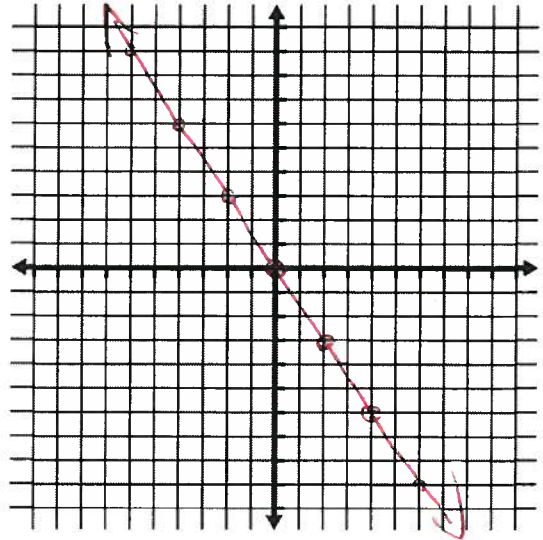
*y*int = 6  
slope = -1 =  $-\frac{1}{1}$



4)  $y = -\frac{3}{2}x$

$y_{int} = 0$

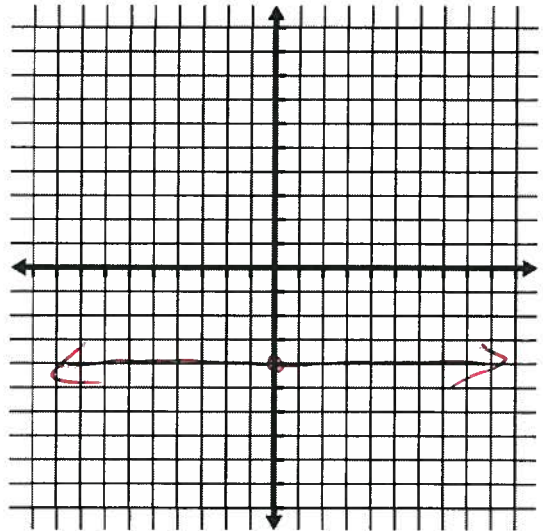
slope =  $-\frac{3}{2}$



5)  $y = -4$

$y_{int} = -4$

slope = 0



6)  ~~$x + y = 3 + y$~~

$x = 3$

$y_{int} = \text{none}$

slope = undefined

