

# 5.1. Slope-Intercept form

Graph Paper,

Nov. 28, 2006

But Not Required

Recall: The Slope-Intercept form of the equation of a line is:

$$y = mx + b$$

- generic equation

where  $m = \text{slope}$        $b = \text{y-int.}$

Write the equation of the line  
with  $\text{slope} = 3$  &  $y\text{-int} = 7$

$$y = mx + b$$

$$\underline{\underline{y = 3x + 7}}$$

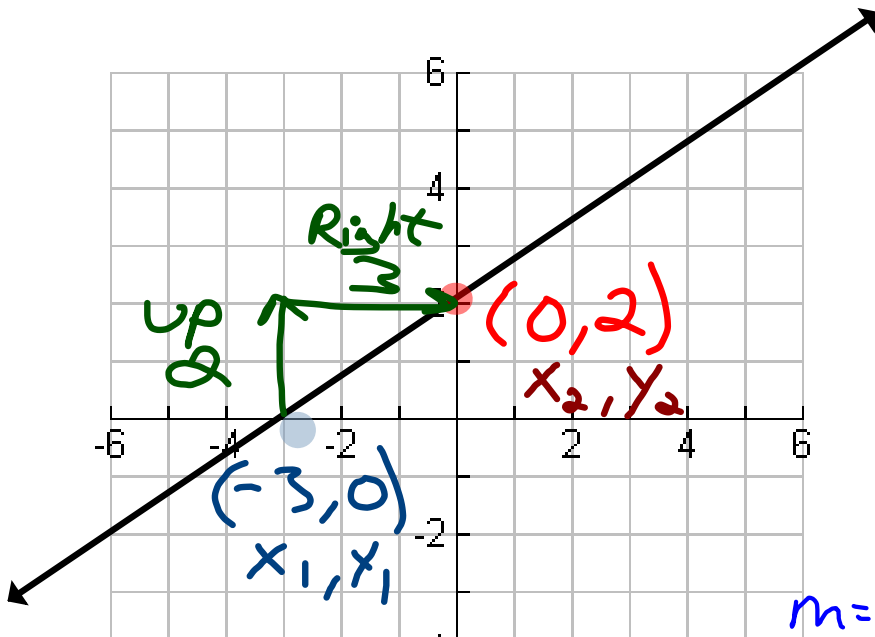
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w/  $y\text{-int} = -8$  &  $m = \frac{5}{2}$

$$y = mx + b$$

$$\underline{\underline{y = \frac{5}{2}x - 8}}$$

Write the equation of the line:



We know Slope Intercept  
 $y = mx + b$

We Need to know...

$$\text{Slope} = \frac{2}{3}$$

$$y\text{-int.} = 2$$

$$m = \text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\text{change in } y}{\text{change in } x} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{2 - 0}{0 - (-3)} = \frac{2}{3}$$

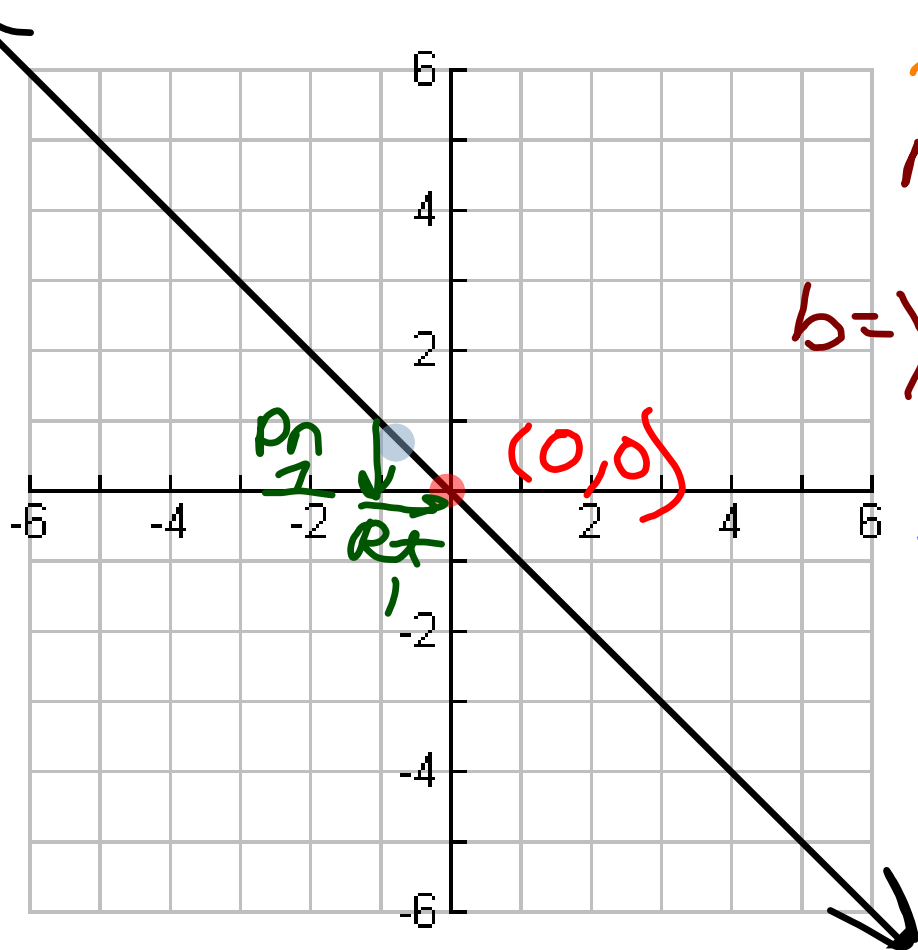
$$m = \frac{2}{3}$$

Write the equation of the line:

$$y = mx + b$$

$$m = \text{slope} = \underline{\hspace{2cm}}$$

$$b = \text{y-int} = \underline{0}$$

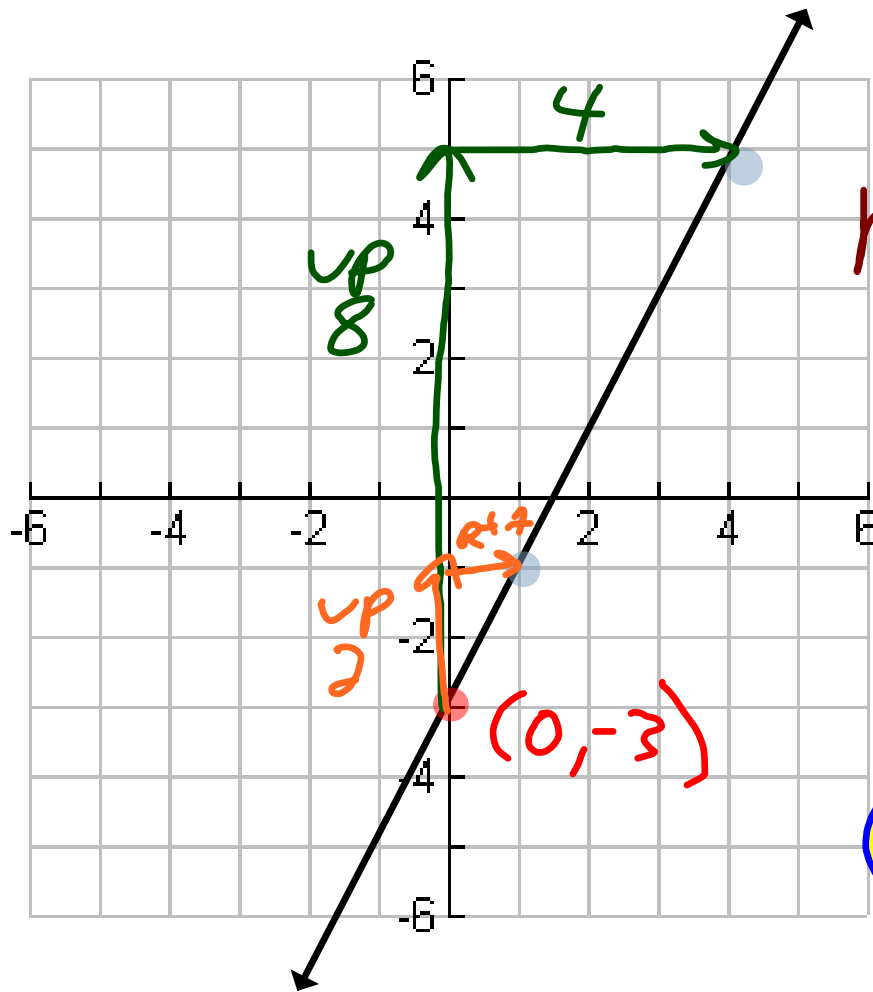


$$m = \frac{\text{rise}}{\text{run}} = \frac{-1}{1} = \underline{\underline{-1}}$$

$$y = -1x + 0$$

$$\underline{\underline{y = -1x}} \text{ or } \underline{\underline{y = -x}}$$

Write the equation of the line:



$$y = mx + b$$

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

$$b = y\text{-int} = -3$$

$$m = \frac{\text{rise}}{\text{run}} = \frac{8}{4} = \frac{2}{1} = \underline{\underline{2}}$$

$$y = 2x - 3$$

O.T.L.

①

Pg 272: 1-3, 13, 16,

18-25(a), 34-39(a)

22-25: write the slope, y-int, &  
the eqn of  
the line.

$$\textcircled{11} \quad y = 2(-3x + 1)$$

x	y
-2	14
-1	8
0	2
1	-4
2	-10

~~0~~

$$\textcircled{12} \quad 6 = 8x - 3y$$

$$\begin{array}{r} -8x \quad -8x \\ \hline \end{array}$$

$$\begin{array}{r} -8x + 6 = -3y \\ \hline \end{array}$$

$$\frac{8}{3}x - 2 = y$$



x	y
-6	-18
-3	-10
0	-2
3	6
6	14



⑦  $5x - 2y = 20$

$$\begin{array}{r} 5x - 2y = 20 \\ -5x \phantom{- 2y} = -5x \\ \hline \end{array}$$

$$\frac{-2y}{-2} = \frac{-5x + 20}{-2}$$

$$\underline{\underline{y = \frac{5}{2}x - 10}}$$

⑧  $-4x - 8y = 32$

$+4x$

$+4x$

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$-8y = 4x + 32$

$-8$

$-8$

$-8$

$y = -\frac{1}{2}x - 4$

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$$(34) \quad y = \frac{4}{3}x - 8$$

$$m = \text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\text{change in } y}{\text{change in } x} = \frac{y_2 - y_1}{x_2 - x_1}$$

$m$

$b$