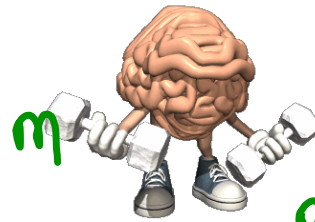
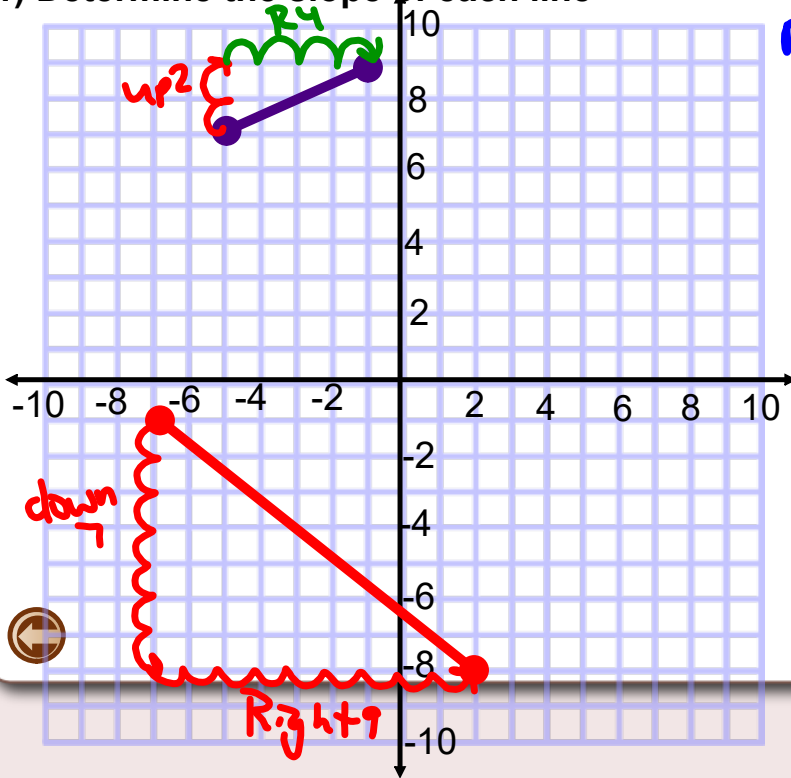


# Warm Up



1) Determine the slope of each line



$$m = \frac{\text{rise}}{\text{run}} = \frac{+2}{+3} = \frac{2}{3}$$

Reduce

$$m = \frac{\text{rise}}{\text{run}} = \frac{-7}{9}$$



Calculate the slope.

$x_1, y_1$     $x_2, y_2$   
1. (3,5) (2,8)

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

$$= \frac{8 - 5}{2 - 3}$$

$$= \frac{3}{-1}$$

$$= -3$$

$(x_1, y_1)$     $(x_2, y_2)$   
2. (-9,-2) (7,3)

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

$$= \frac{3 - -2}{7 - -9}$$

$$= \frac{3 + 2}{7 + 9}$$

$$= \frac{5}{16}$$

← tidy  
Signs

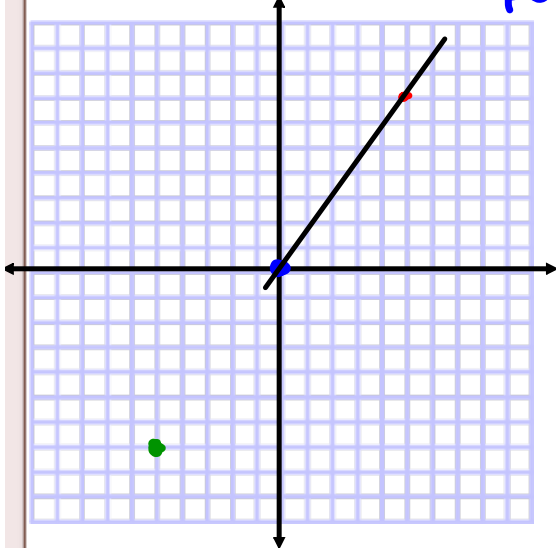
**Example 2**

## Drawing a Line Segment with a Given Slope

Draw a line segment with each given slope.

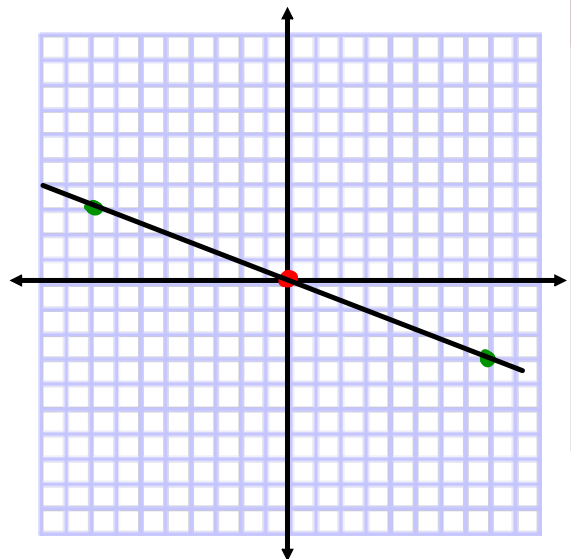
a)  $\frac{7}{5}$  *rise*  
*run*

*you pick initial point (0,0)*



b)  $-\frac{3}{8}$

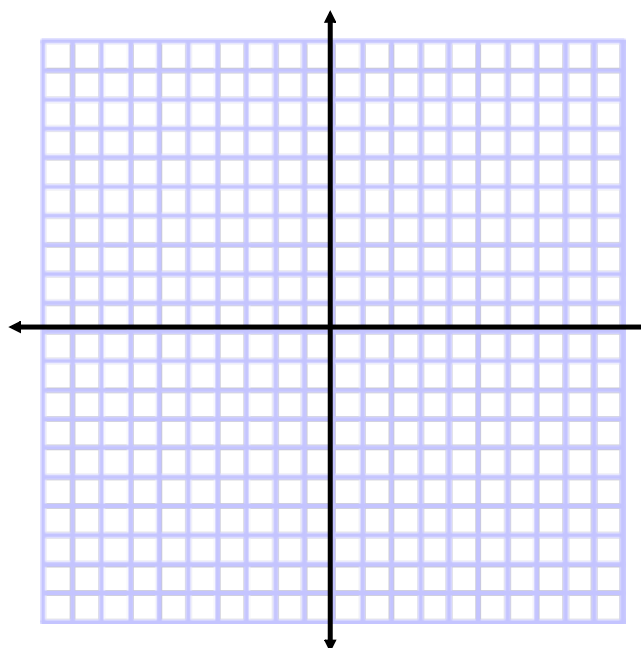
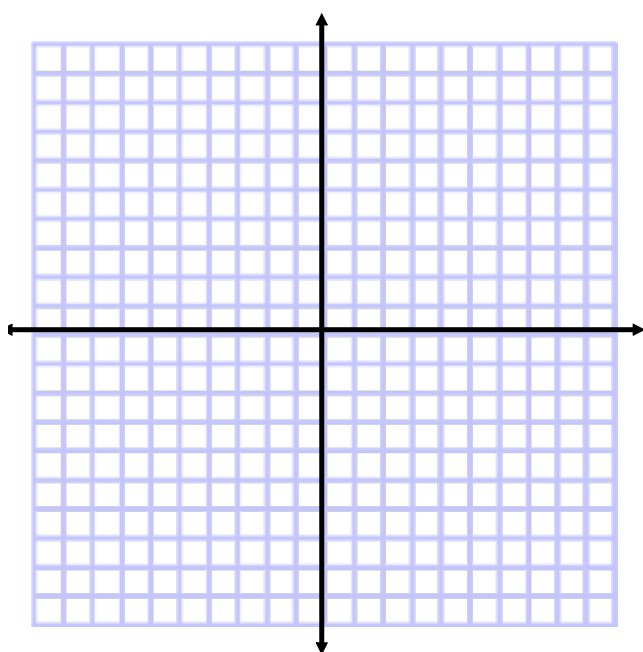
*pick 0,0*



2. Draw a line segment with each slope.

a)  $\frac{4}{9}$

b)  $-\frac{8}{3}$

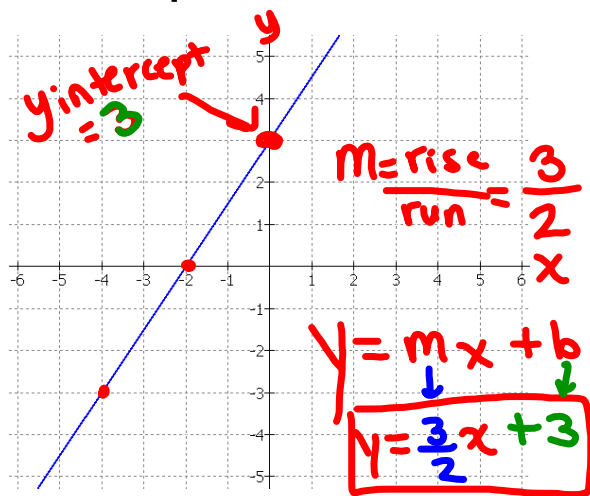


Determine the slope of each of the following lines:

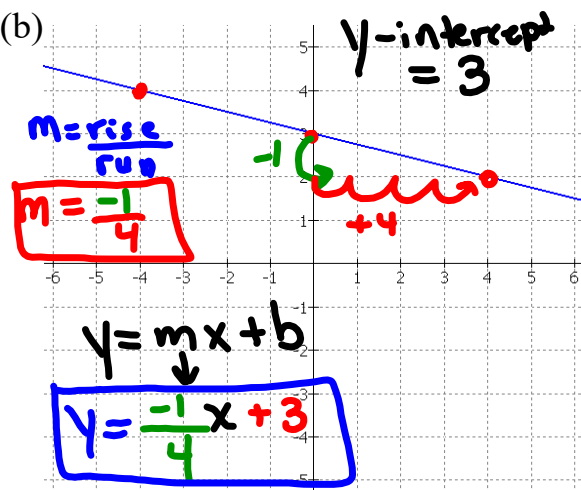
Find Equation of line

Slope y-intercept

(a)



(b)



Which ordered pairs should we use to make our calculation?

$$\text{slope} = \frac{\Delta y}{\Delta x}$$

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

$$\text{slope} = \frac{\Delta y}{\Delta x}$$

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

Given Slope find rise or run

slope  
↓

- 1) If  $m = -3$  and the run = 5, what would the rise equal to?

$$m = \frac{\text{rise}}{\text{run}}$$

$$-3 = \frac{r}{5}$$

let r represent rise  
Solve for r

$$-3 \times 5 = \frac{r}{5} \times 5$$

$$\boxed{-15 = r} \quad \text{rise is } 15$$

- 2) If  $m = 8$  and the rise = 24, what would the run equal to?

$$m = \frac{\text{rise}}{\text{run}}$$

$$8 = \frac{24}{r}$$

Solve for 'r'

(Remember 'r' needs to go to top)

$$8 \times r = \frac{24}{r} \times r$$

$$8r = 24$$

$$\frac{8r}{8} = \frac{24}{8}$$

$$\boxed{r = 3}$$

The run is 3

$$\frac{6}{1} = \frac{2}{x}$$

cross multiply

$$6x = 2$$

$$\cancel{6}x = \frac{2}{\cancel{6}}$$

$$x = \frac{1}{3}$$



