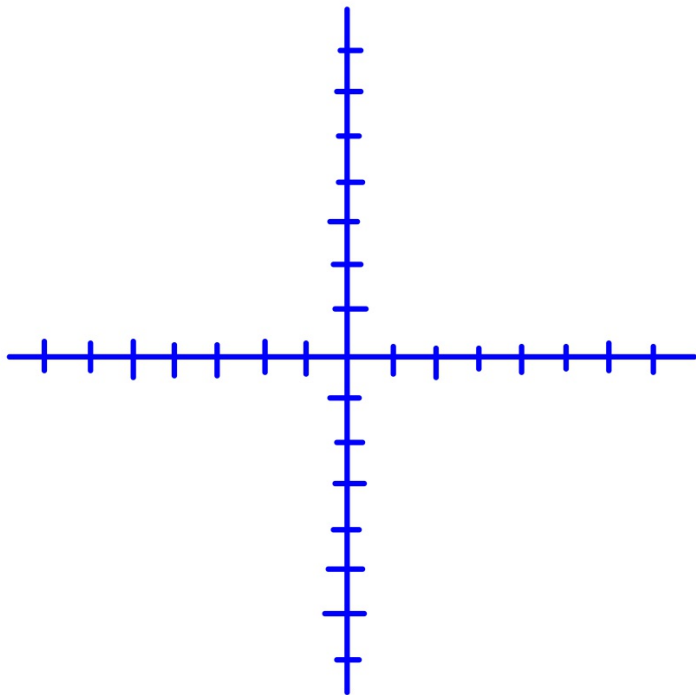


Warm Up:

Make an x-y table for the following equation and graph it.

$$5y + 5x = 20$$



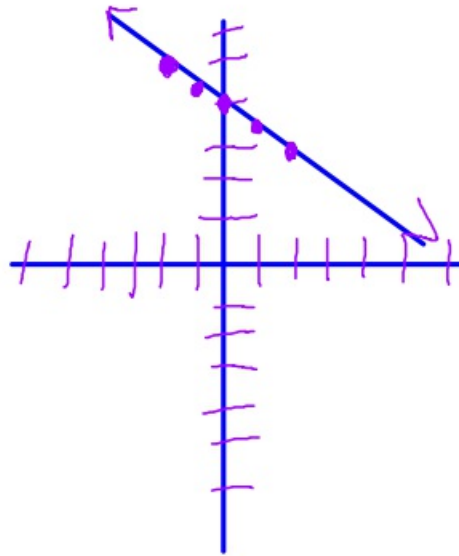
Graphing with an x-y table:

1. Create an x-y table.
2. Pick 5 numbers for x and write them in the table.
3. Substitute each number in to the equation and solve for y. Write each solution into your table.
4. Graph the resulting points.

Example:

$$2x + 4y = 16$$

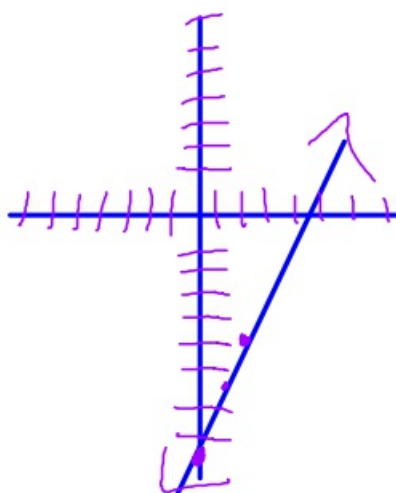
X	Y
-2	5
-1	4.5
0	4
1	3.5
2	3



Example 2:

X	Y
-2	-11.67
-1	-10
0	-8.3
1	-6.7
2	-5

$$\begin{aligned}5x - 3y &= 25 \\ \frac{5}{-5} - 3y &= \frac{25}{-5} \\ -3y &= \frac{20}{-3} \\ y &= -6.7\end{aligned}$$



Example 3:

$$2y = 3x - 7$$

Graphing with x and y intercepts:

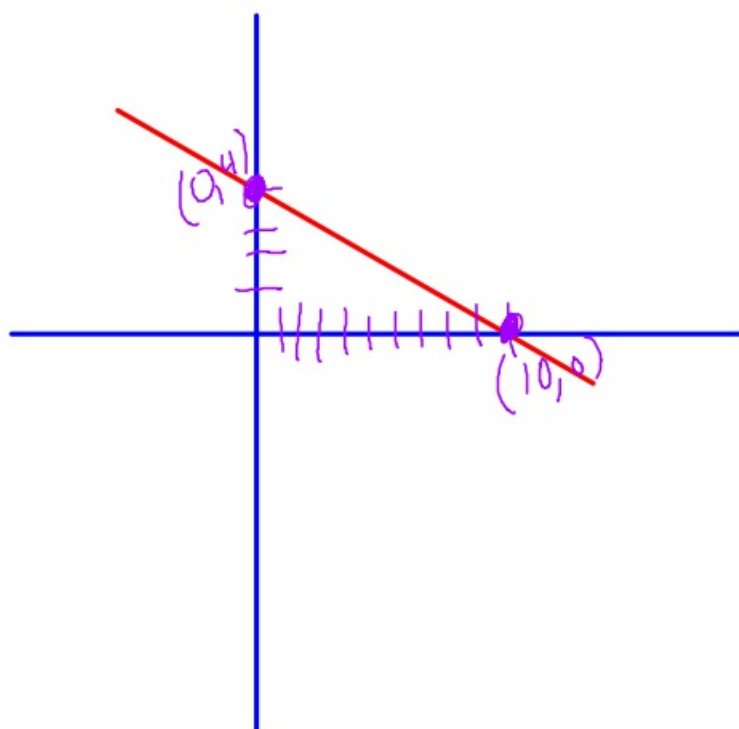
$$2x + 5y = 20$$

To find the x-intercept, substitute 0 in for y and solve.

$$2x + 5(0) = 20$$
$$\frac{2x}{2} = \frac{20}{2} \quad x = 10$$

To find the y-intercept, substitute 0 in for x and solve.

$$2(0) + 5y = 20$$
$$\frac{5y}{5} = \frac{20}{5}$$
$$y = 4$$



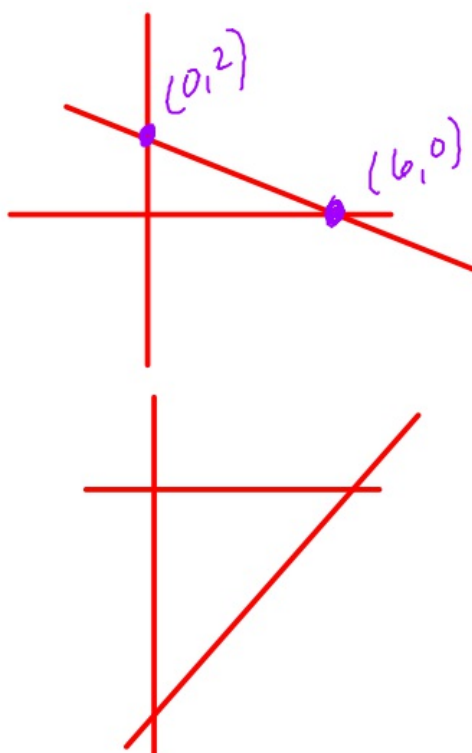
Examples:

1. $3x + 9y = 18$

$$3(0) + 9y = 18$$
$$9y = 18$$
$$y = 2$$

$$3x + 9(0) = 18$$
$$3x = 18$$
$$x = 6$$

2. $4x - 3y = 24$



Slope-Intercept Form:

$$y = mx + b$$

$$m = \text{slope}$$

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

Formula for m:

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

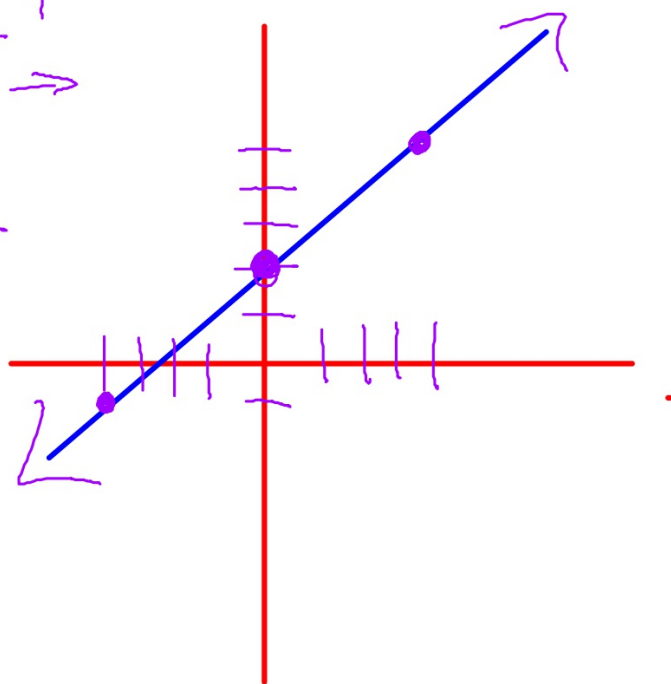
To graph from slope-intercept form, graph b on the y -axis, then use m to find two more points on the line.


Example:


$$y = \boxed{\frac{3}{4}}x + \textcircled{2}$$

b

$$\frac{3}{4} \begin{matrix} \uparrow \\ \rightarrow \end{matrix}$$
$$\frac{-3}{-4}$$



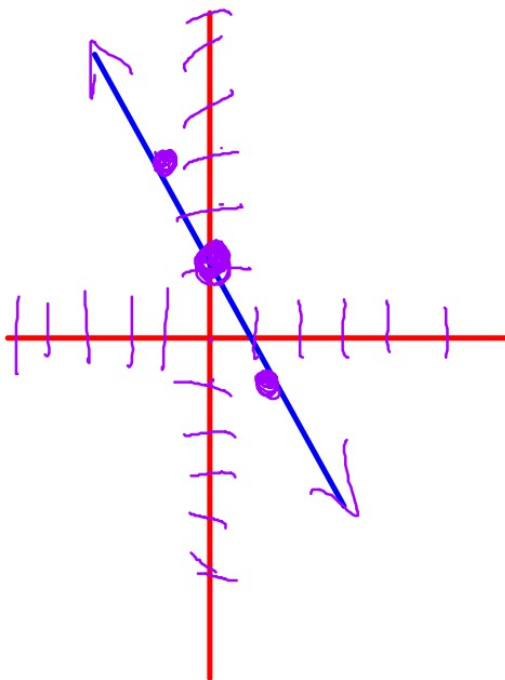
positive m : 

negative m : 

Example 2:

$$y = -2x + 1$$

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



Example 3:

$$y = mx + b$$

$$\begin{array}{r} 2x + 3y = 9 \\ -2x \quad -2x \\ \hline 3y = -2x + 9 \\ \hline y = \frac{-2x + 9}{3} \end{array}$$

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

