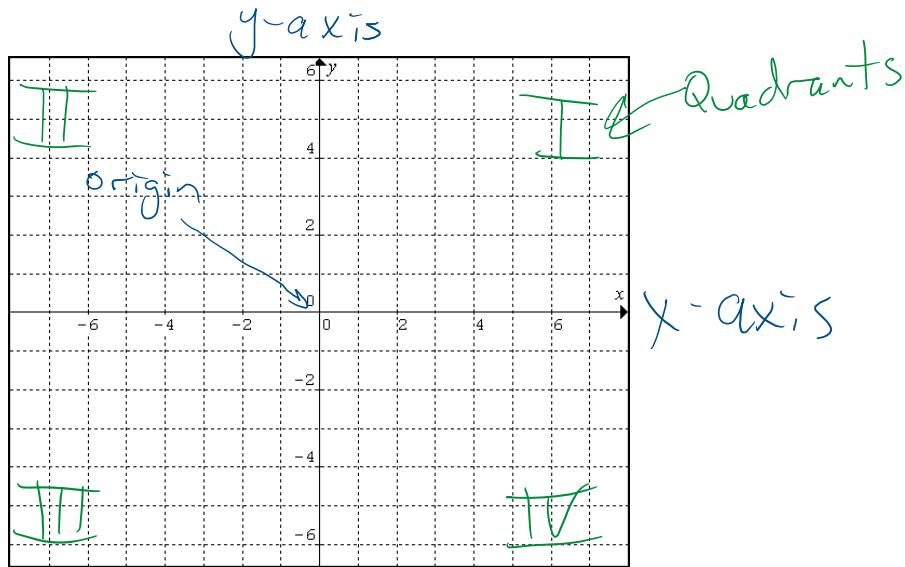


6.0.1 Graphing Linear Equations Review

Recall:



A. Slope Intercept Form: $y=mx+b$

m : slope b : y-intercept

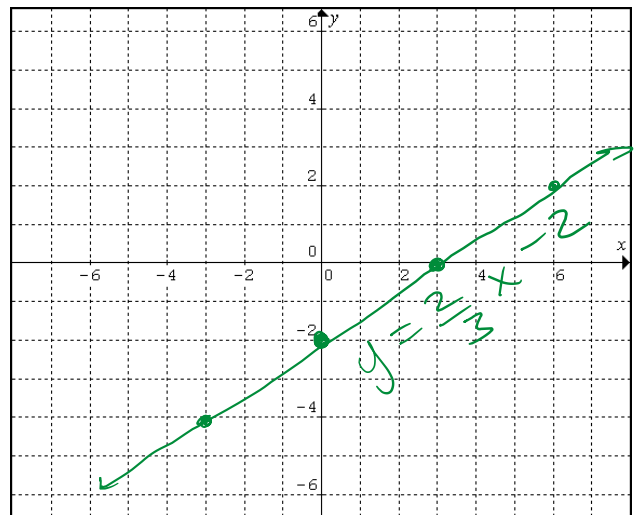
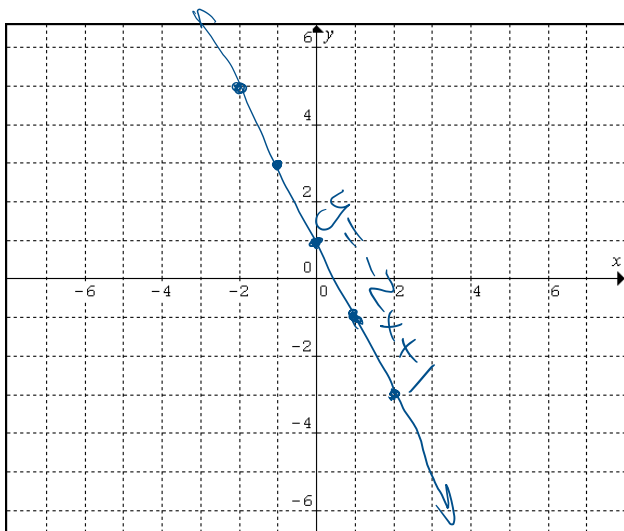
To graph equations in this form:

1. Plot y-intercept
2. Apply the slope to find a second point
3. Join the points and label the line with the equation.

Example 1: Graph:

a) $y = -2x + 1$

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



B. General Form: $Ax + By + C = 0$

$$A > 0$$

A, B, C have to be integers (+ whole #s)

Example 2: Convert to general form:

$$\begin{array}{r} \text{a) } y = -2x + 1 \\ +2x \quad +2x - 1 \\ -1 \\ \hline 2x + y - 1 = 0 \end{array}$$

$$\begin{array}{r} \text{b) } \left(y = \frac{2}{3}x - 2 \right) \times 3 \\ 3y = 2x - 6 \\ -3y \quad -3y \\ \hline 0 = 2x - 3y - 6 \end{array}$$

$$\begin{array}{r} \text{c) } \left(\frac{3}{4}x - \frac{5}{6}y = \frac{2}{3} \right) \times 12 \\ 9x - 10y = 8 \\ -8 \quad -8 \\ \hline 9x - 10y - 8 = 0 \end{array}$$

Finding Intercepts:

Finding the y-intercept is easy if the equation is in slope-intercept form. Regardless of the form, to find an intercept, set the opposite variable equal to zero and solve.

Example 3: Find the x-intercept and the y-intercept:

$$\begin{array}{l} \text{a) } y = -2x + 1 \\ y\text{-int: } 1 \\ x\text{-int: } 0 = -2x + 1 \\ \frac{2x}{2} = \frac{1}{2} \\ x = \frac{1}{2} \end{array}$$

$$\begin{array}{l} \text{b) } y = \frac{2}{3}x - 2 \\ y\text{-int: } -2 \\ x\text{-int: } \left(0 = \frac{2}{3}x - 2 \right) \times 3 \\ \left(0 = 2x - 6 \right) \div 2 \\ 0 = x - 3 \\ 3 = x \end{array}$$

$$\begin{array}{l} \text{c) } \frac{3}{4}x - \frac{5}{6}y = \frac{2}{3} \\ 9x - 10y - 8 = 0 \\ y\text{-int: } 9(0) - 10y - 8 = 0 \\ -10y - 8 = 0 \\ +8 \quad +8 \\ -10y = 8 \\ \div -10 \quad \div -10 \\ y = -\frac{4}{5} \end{array}$$

$$x\text{-int: } 9x - 10(0) - 8 = 0$$

$$9x - 8 = 0$$

$$\begin{array}{l} 9x = 8 \\ \frac{9x}{9} = \frac{8}{9} \\ x = \frac{8}{9} \end{array}$$

Assignment: Worksheets