

## SOLVING LINEAR EQUATIONS GRAPHICALLY

**RECALL:** Solve  $2x - 5 = 1$ .

$$\begin{array}{r}
 2x - 5 = 1 \\
 +5 \quad +5 \\
 \hline
 2x = 6 \\
 \hline
 x = 3
 \end{array}$$

### STEPS FOR SOLVING LINEAR EQUATIONS GRAPHICALLY

1. Write the equation in the form  $ax + b = \textcircled{0}$ .
2. Replace the 0 with  $y$ .
3. Graph the equation.
4. The answer is where the graph crosses the x-axis.

x-axis. *want to be 0*

$$2x - 5 = 1$$

STEP 1:  $2x - 5 = 1$

$$\begin{array}{r}
 -1 \quad -1 \\
 \hline
 2x - 6 = 0
 \end{array}$$

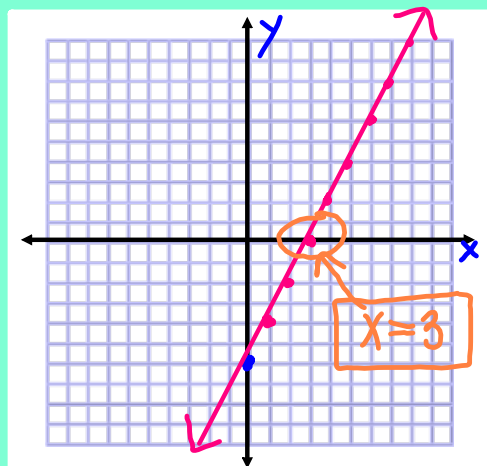
$$2x - 6 = 0 \quad y$$

STEP 2:  $y = 2x - 6$

STEP 3: Graph  $y = 2x - 6$ .

$$m = \frac{2}{1} \quad y\text{-int} = -6$$

*Start*



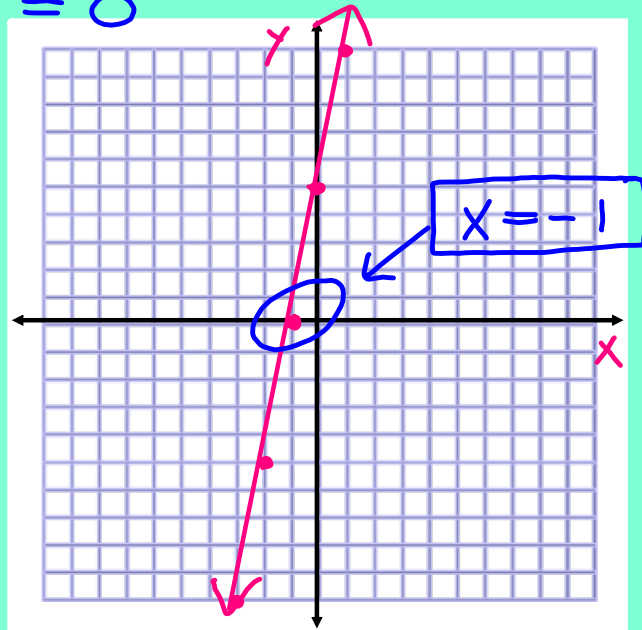
1. Solve  $5x + 3 = -2$  graphically.

$$\begin{array}{r} +2 \quad +2 \\ \hline 5x + 5 = 0 \end{array}$$

$$y = 5x + 5$$

$$m = \frac{5}{1}$$

$$y\text{-int} = 5$$



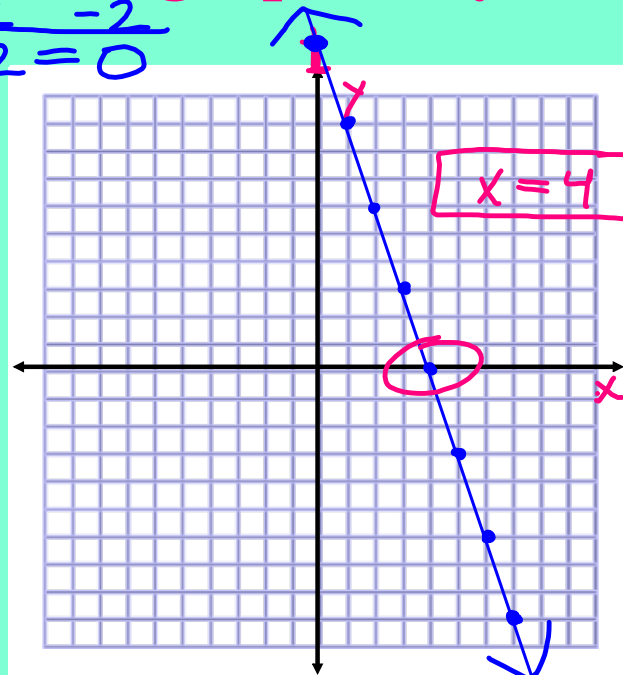
2. Solve  $-3x + 14 = 2$  graphically.

$$\begin{array}{r} -2 \quad -2 \\ \hline -3x + 12 = 0 \end{array}$$

$$y = -3x + 12$$

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

$$y\text{-int} = 12$$



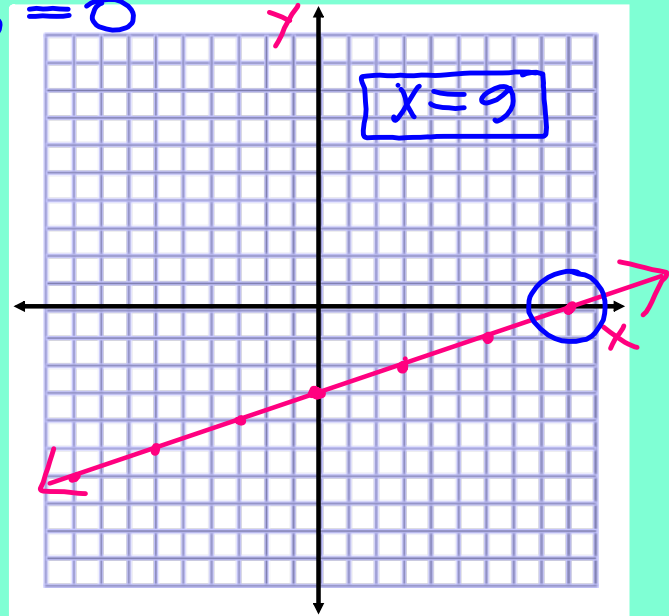
3. Solve  $\frac{1}{3}x + 4 = 7$  graphically.

$$\frac{1}{3}x - 3 = 0$$

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

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

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



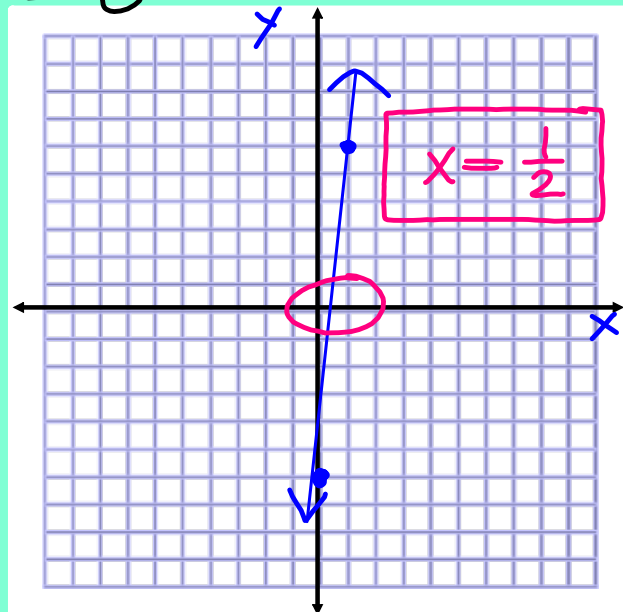
4. Solve  $-4 + 9x = -3x + 2$  graphically.

$$-6 + 12x = 0$$

$$y = 12x - 6$$

$$m = \frac{12}{1}$$

$$y\text{-int} = -6$$



5. Solve  $2x - 11 = 6x - 3$  graphically.

$$\begin{array}{r} -6x + 3 \\ \hline -4x - 8 = 0 \end{array}$$

$$y = -4x - 8$$

$$m = -\frac{4}{1}$$

$$y\text{-int} = -8$$

