

How do you solve a system of equations by graphing?

#1: Write each equation in slope intercept form & graph.

$$2x + y = 3$$
$$y - x = -3$$

Equation 1

$$2x + y = 3$$

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

slope: -2

y-int: 3

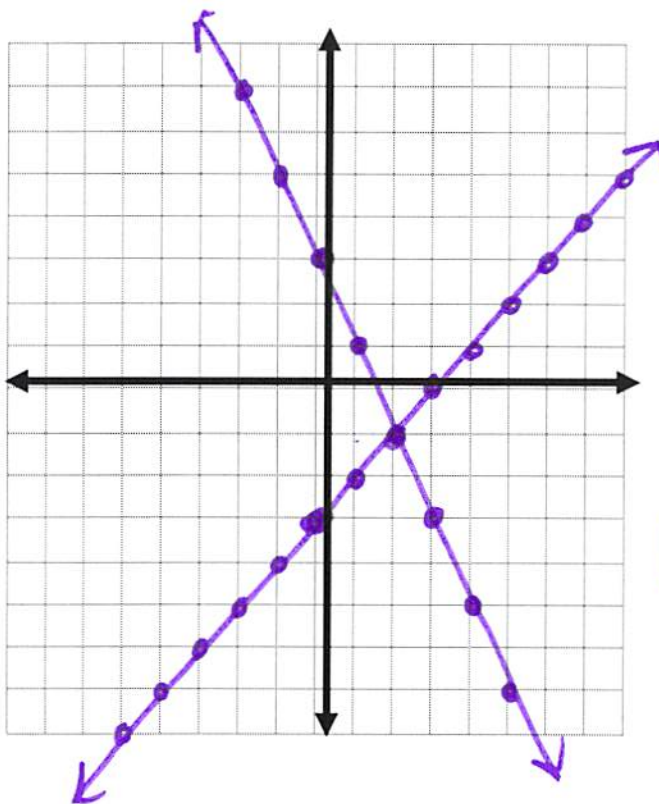
Equation 2

$$y + x = -3$$

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

slope: 1

y-int: -3



#2: Look for the intersection of the two lines and state the coordinate. (There may not be an intersection.)

Circle the correct answer:

Intersection?
Coordinate (2, -1)

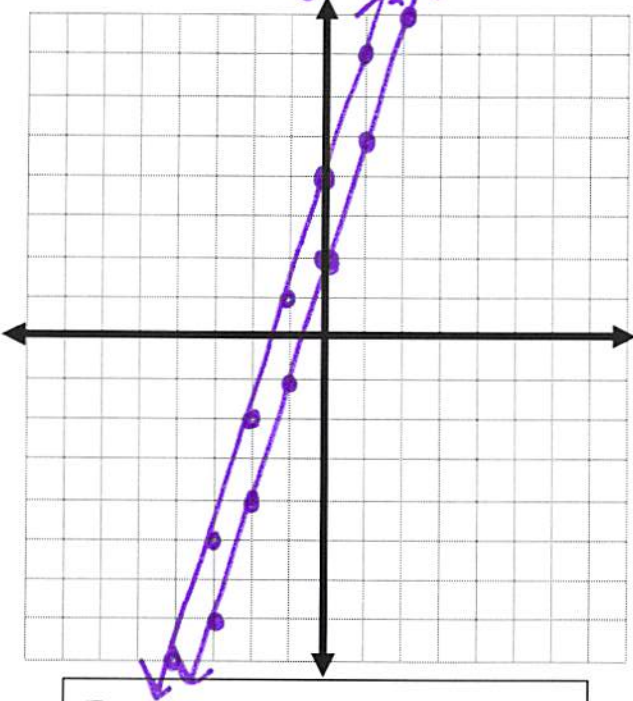
Same line?

Infinite solutions _____

Parallel lines?

No solution _____

$$\begin{aligned} -6x + 2y &= 4 \\ -9x + 3y &= 12 \end{aligned}$$



Equation 1

$$-6x + 2y = 4$$

$$\begin{array}{r} +6x \qquad +6x \\ \hline \end{array}$$

$$\frac{2y}{2} = \frac{6x}{2} + \frac{4}{2} \quad s:3$$

$$\boxed{y = 3x + 2} \quad y:2$$

Equation 2

$$-9x + 3y = 12$$

$$\begin{array}{r} +9x \qquad +9x \\ \hline \end{array}$$

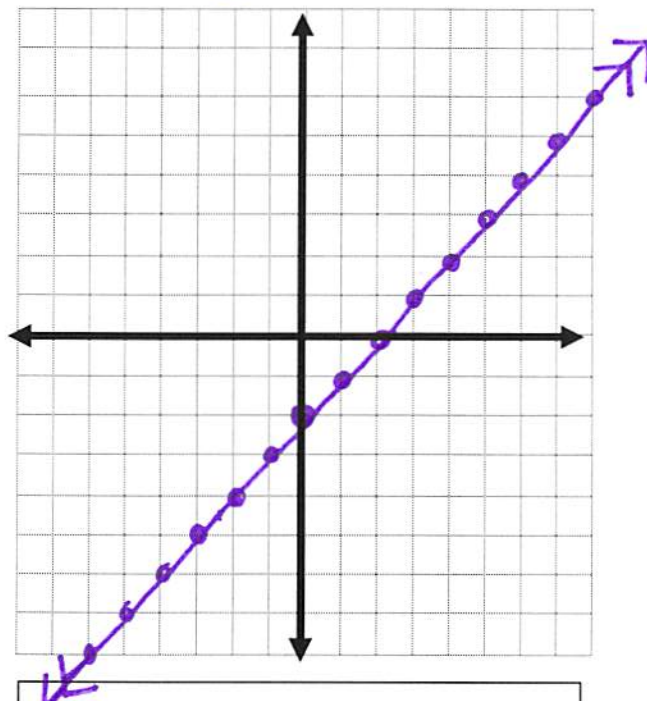
$$\frac{3y}{3} = \frac{9x}{3} + \frac{12}{3} \quad s:3$$

$$\boxed{y = 3x + 4} \quad y:4$$

Solution:

NO SOLUTION

$$\begin{aligned} 2x - 2y &= 4 \\ -x + y &= -2 \end{aligned}$$



Equation 1

$$2x - 2y = 4$$

$$\begin{array}{r} -2x \qquad -2x \\ \hline \end{array}$$

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

$$\boxed{y = x - 2}$$

Equation 2

$$-x + y = -2$$

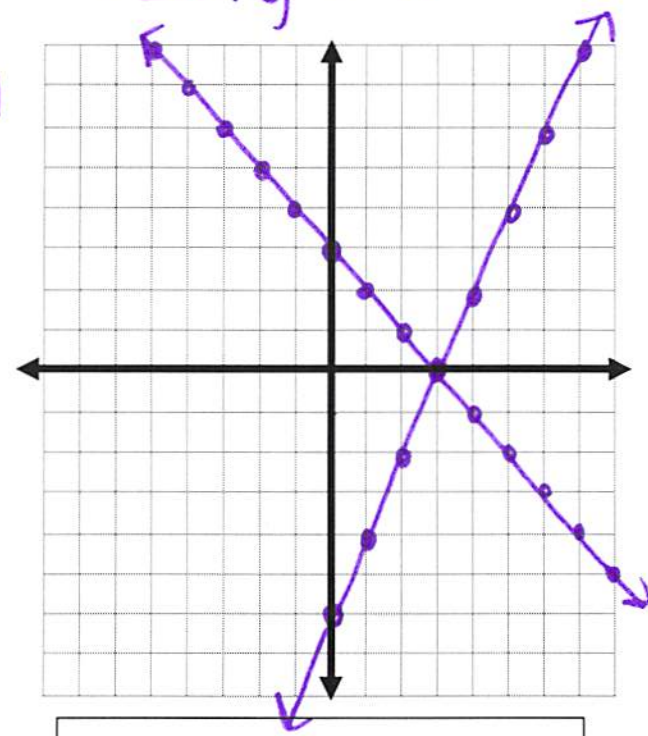
$$\begin{array}{r} +x \qquad +x \\ \hline \end{array}$$

$$\boxed{y = x - 2}$$

Solution:

Infinite Solutions

$$\begin{aligned} x + y &= 3 \\ -2x + y &= -6 \end{aligned}$$



Equation 1

$$x + y = 3$$

$$\begin{array}{r} -x \qquad y \qquad -x \\ \hline \end{array}$$

$$\boxed{y = -x + 3} \quad s:-1$$

$$y:3$$

Equation 2

$$-2x + y = -6$$

$$\begin{array}{r} +2x \qquad +2x \\ \hline \end{array}$$

$$\boxed{y = 2x - 6} \quad s:2$$

$$y:-6$$

Solution:

(3, 0)