



Name: _____

Date: _____

Is It a Solution?

Example: Is the order pair (3,-4) a solution of the system $\begin{matrix} 2x + y = 2 \\ x - y = 4 \end{matrix}$?

Step One: Substitute the order pair for (x,y) in both equations.

$$2x + y = 2 \rightarrow 2(3) + (-4) = 6 - 4 = 2 \therefore (3, -4) \text{ is a solution of the first equation.}$$

$$x - y = 4 \rightarrow 3 - (-4) = 7 \neq 4 \therefore (3, -4) \text{ is NOT a solution to the second equation.}$$

Step Two: If the order pair is a solution to both equations, then it is a solution of the system.

So, NO, (3,-4) is not a solution of the system.

Example: Is the order pair (-3,0) a solution of the system $\begin{matrix} y - 4 = 2(x + 1) \\ y = x + 3 \end{matrix}$?

Step One:

$$0 - 4 = 2(-3 + 1) \rightarrow -4 = 2(-2) \rightarrow -4 = -4 \therefore (-3, 0) \text{ is a solution of the first equation.}$$

$$0 = -3 + 3 \rightarrow 0 = 0 \therefore (-3, 0) \text{ is a solution of the second equation.}$$

Step Two: Yes, (-3,0) is a solution to the system.

Directions: Determine if the given point is a solution to the system. Show your work.

$$\begin{matrix} 3x + y = 11 \\ 1.) x - 2y = 6 \\ (4, -1) \end{matrix}$$

$$\begin{matrix} x + y = 7 \\ 2.) 2x + y = 5 \\ (1, 6) \end{matrix}$$

$$\begin{matrix} x + y = 3 \\ 3.) 2x + y = 4 \\ (1, 2) \end{matrix}$$

$$\begin{matrix} x + y = 6 \\ 4.) y - x = -4 \\ (5, 1) \end{matrix}$$

$$\begin{matrix} 2x - 3y = 6 \\ 5.) 3x + y = -5 \\ (-1, -2) \end{matrix}$$

$$\begin{matrix} 4x + 2y = -6 \\ 6.) y - 2x = 4 \\ (0, -3) \end{matrix}$$