Graph and Verify

Let's practice graphing some systems of equations and verifying their solutions.

1) A *solution* to a *system of linear equations* is a set of values that makes each equation _____ (*true, false*).

For problems two and three, determine whether the given coordinate *is* or *is not* a solution to the system of equations. Number two has been started for you. Remember, by definition, both equations have to be *true* when you substitute the given numbers for the variables.

2) (3, -1); $\begin{cases} x-2y=5 \\ 2x-y=7 \end{cases}$

$x-2y=5$	$2x-y=7$
$3-2(-1)=5$	
$3+2=5$	
$5=5$ ✔	

The coordinate (3, -1) _____ (*is, is not*) a *solution* to the *system of equations* because it makes the equations _____ (*true, false*).

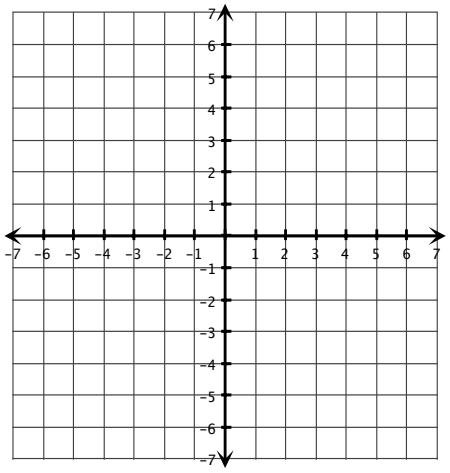
3) (1, -4); $\begin{cases} x-2y=8 \\ y=4x-8 \end{cases}$

The coordinate (1, -4) _____ (*is, is not*) a *solution* to the *system of equations* because it makes the equations _____ (*true, false*).

For problems four through seven, graph each system of equations and then verify your solution by using substitution.

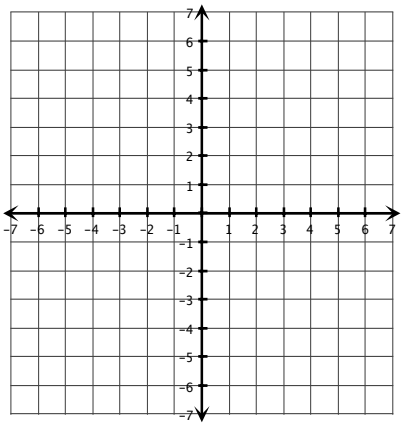
4) $\begin{cases} y=-2x+6 \\ y=2x+2 \end{cases}$

The *solution* is _____.



Verify by using substitution.

5) $\begin{cases} y = 2x - 4 \\ y = -\frac{1}{2}x + 1 \end{cases}$

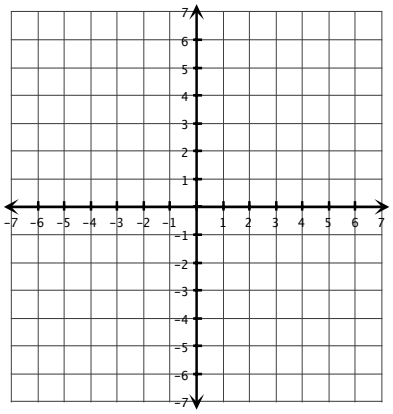


Verify by using substitution.

The *solution* is

_____.

6) $\begin{cases} 2x + y = 4 \\ 2x + y = -2 \end{cases}$

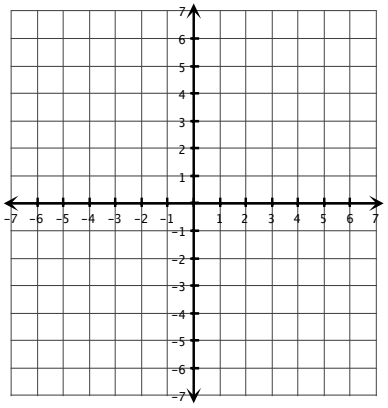


Verify by using substitution.

The *solution* is

_____.

7) $\begin{cases} y = -3x + 2 \\ 3x + y = 2 \end{cases}$



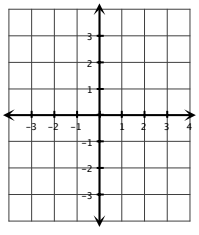
Verify by using substitution.

The *solution* is

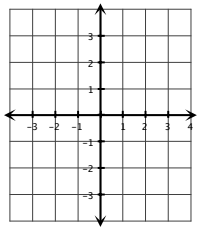
_____.

Conclusion: Go back and look at problems four through seven. Three different types of *solutions* resulted for a system of equations; we learned about two yesterday. Sketch of each of the possible solutions, as described.

One Solution



No Solution



Infinitely Many Solutions