

Date: _____

Solving Systems of Equations by Graphing

Linear System:

Two or more lines considered at the same time.

Solution to a Linear System:

The point of intersection (POI) of the lines.

Example 1

Which of the given points is a solution to the system of equations?

a. $(-5, 6)$ or $(5, -4)$

$$x + y = 1$$

$$2x - 5y = 30$$

The coordinates, (x, y) , of the POI must satisfy both equations.

Substitute the (x, y) values into the equations.

You are checking, so separate LS from RS!

b. $(5, 2)$ or $(4, 0)$

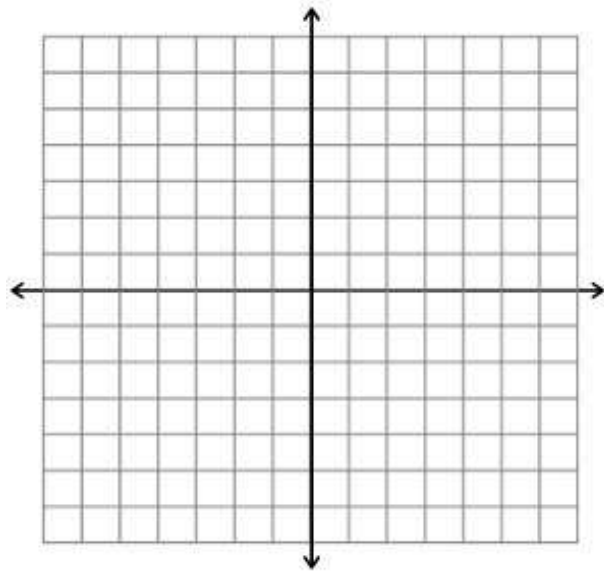
$$x + y = 7$$

$$y = 2x - 8$$

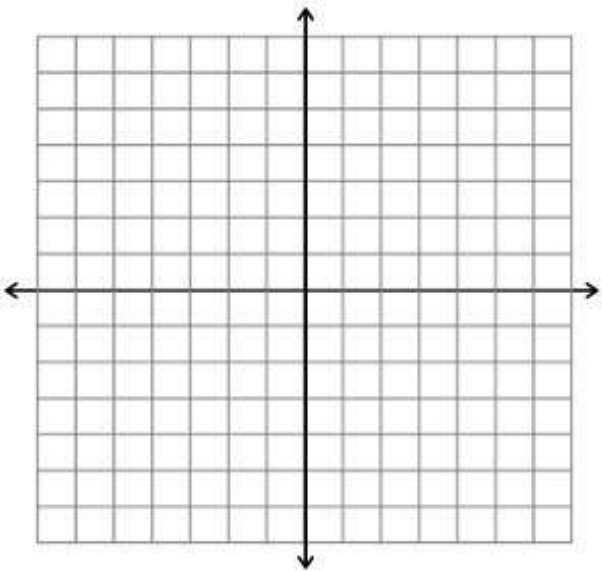
Example 2

Solve each of the following systems by graphing. Check your solution.

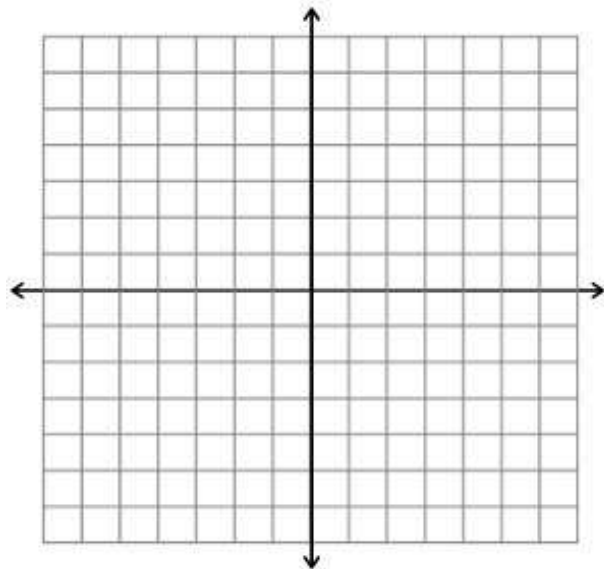
a. $y = x + 4$
 $y = -x + 2$



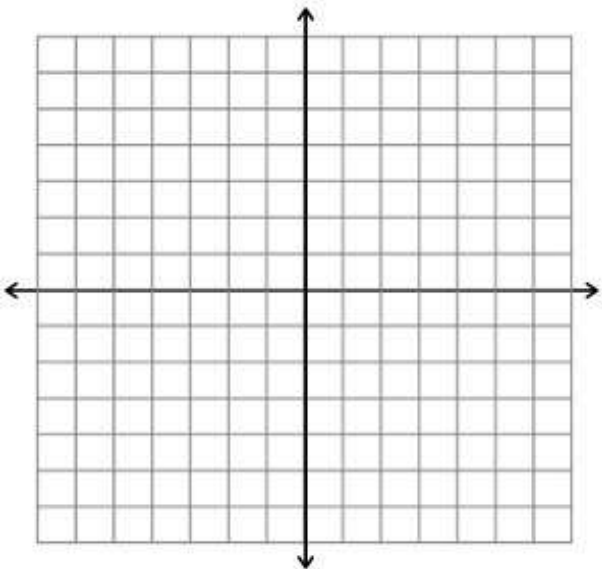
b. $2x + y = 5$
 $x - 2y = 10$



c. $5x - 2y = 10$
 $x + 2y = 2$



d. $y = 3x + 4$
 $y = 3x - 2$



Homework:

Solve the following systems of equations by graphing.

1. $y = 2x - 3$

$y = -x$

3. $y = -2x + 5$

$y = -4x + 9$

5. $x + y = 2$

$6x - 3y = -24$

7. $4x - 2y = 8$

$4x - 8y = -16$

2. $y = \frac{1}{2}x - 3$

$y = -x - 6$

4. $y = 3x$

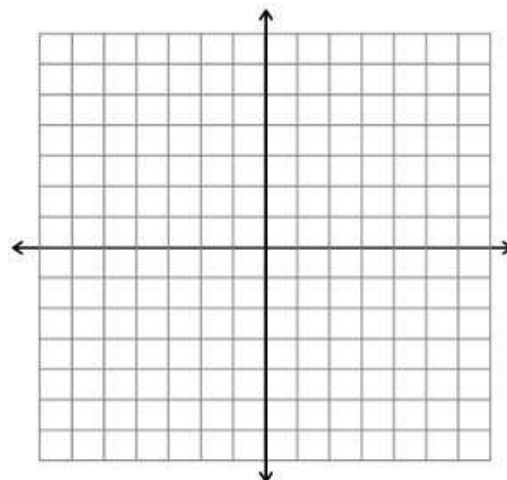
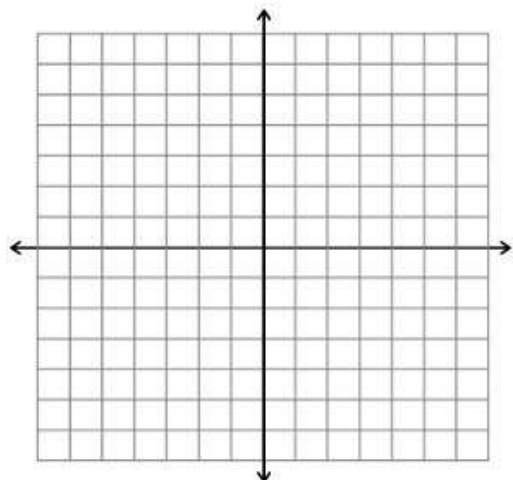
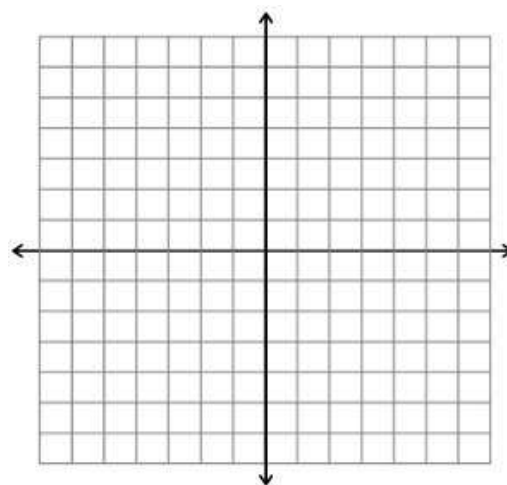
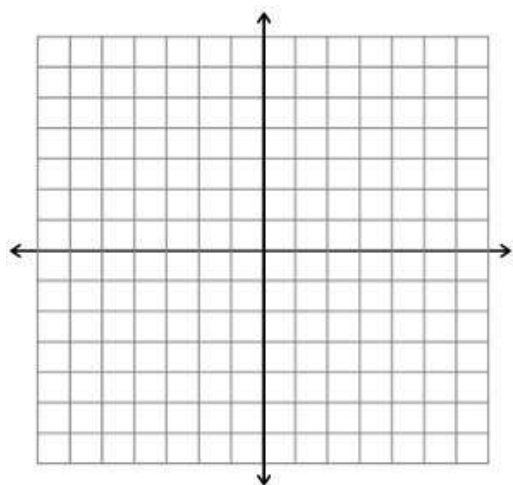
$y = -x - 4$

6. $x + 2y = 8$

$2x + y = 10$

8. $x + 2y = -6$

$3x - 4y = 12$

**Answers:**

1. $(1, -1)$

2. $(-2, -4)$

3. $(2, 1)$

4. $(-1, -3)$

5. $(-2, 4)$

6. $(4, 2)$

7. $(4, 4)$

8. $(0, 3)$

