

Name:

Date:

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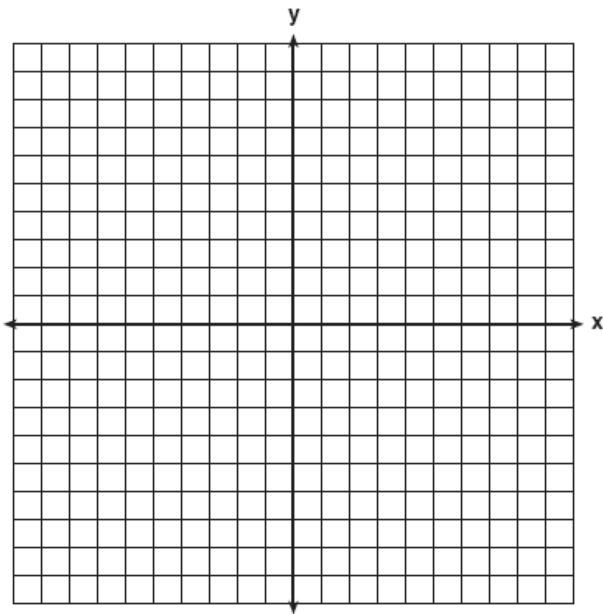
### Graphing a system of equations (simultaneous equations)

A system of equations is a set of two equations with two different variables. It can be solved graphically or algebraically.

Steps to solving a system of equations graphically

1. We are trying to find the point where the two lines **intersect\***.
2. Graph each equation on the **same** set of axes.
3. Find and **Label** the point of intersection (this is the answer).
4. **Check** the coordinates of the point of intersection in **both** equations by substituting for x and y.

\*Since a line is an infinite collection of points, EVERY point on a line is a solution to the given equation. When you graph two lines on one graph, the point of intersection is the ONE point that is a solution to both equations...It is the ONE POINT THE TWO LINES SHARE.



Solve graphically and check:

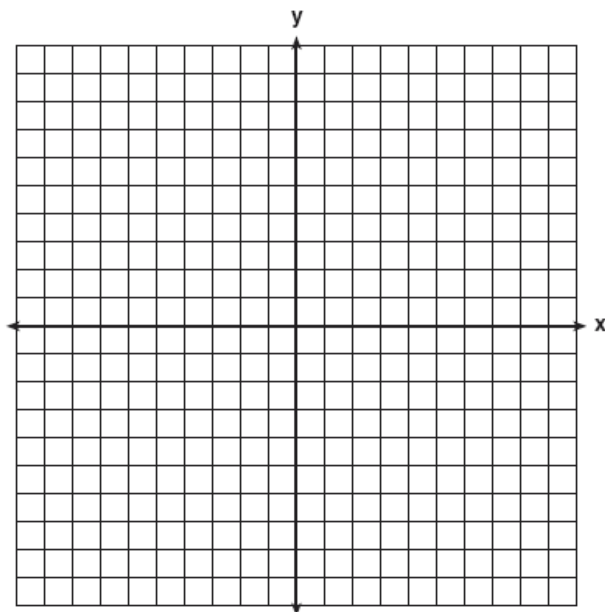
$$y = 2x$$

$$y = 3x - 3$$

$$y = 2x$$

Check: ( , )

$$y = 3x - 3$$



Solve graphically and check:

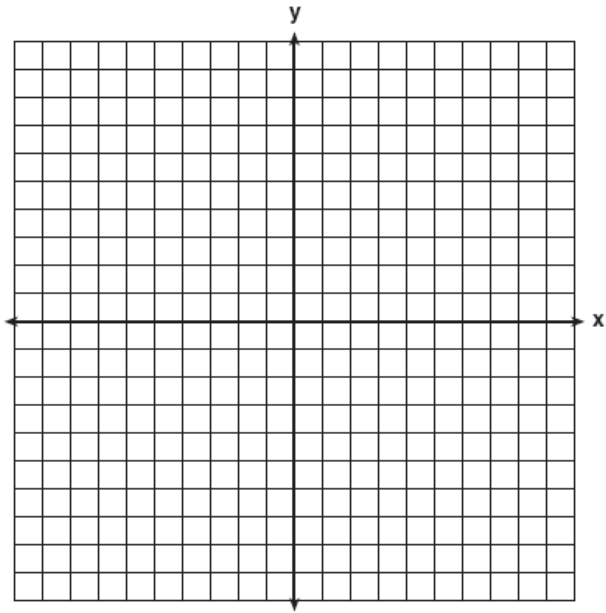
$$x + y = 7$$

$$x - y = 1$$

$$x + y = 7$$

Check: ( , )

$$x - y = 1$$



Solve graphically and check:

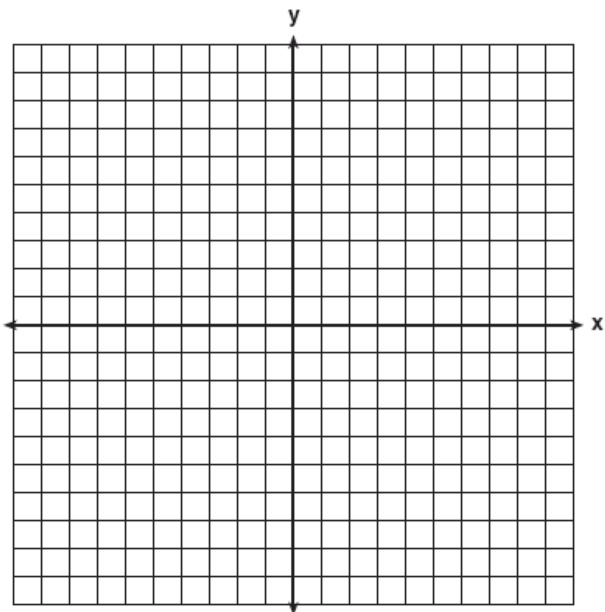
$$x + 3y = 9$$

$$x = 3$$

Check: ( , )

$$x + 3y = 9$$

$$x = 3$$



Solve graphically and check:

$$x = 3$$

$$y = 4$$

Check: ( , )

$$x = 3$$

$$y = 4$$

Answer the following questions in your own words:

What is the answer to a system of equations problem?

Explain why that is the answer: