Name:_____ Date:_____Period:_____

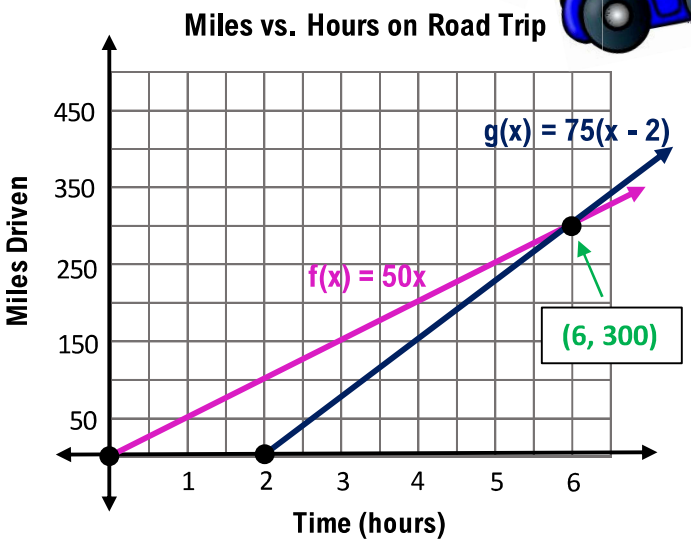
NOTES: SYSTEMS OF EQUATIONS

Solve by Graphing

WHAT IS A SYSTEM OF EQUATIONS?

Your family is taking a vacation, and 2 vehicles are used to make the trip. The first vehicle leaves at 4:00 pm and sets the cruise control at 50 miles per hour. The second vehicle leaves 2 hours after the first vehicle and sets the cruise control at 75 miles per hour. After how many hours will the second vehicle catch up to the first vehicle?

Let **f(x) = 50x** represent the equation for the 1st vehicle
Let **g(x) = 75(x – 2)** represent the equation for the 2nd vehicle



We will graph both situations/equations on the same coordinate plane.

What is the point at which the two lines intersect?

What does this represent if x-values represent time in hours and y-values represent miles driven?

SYSTEM OF EQUATIONS

A set of two or more _____ containing two or more _____.

SOLUTION TO A SYSTEM OF EQUATIONS

An _____ _____ that satisfies each equation (if it is a solution, it makes both equations true).

Tell whether each ordered pair is a solution to the system.

1. (3, 0); $\begin{cases} 2x + 4y = 6 \\ y = 2x - 6 \end{cases}$

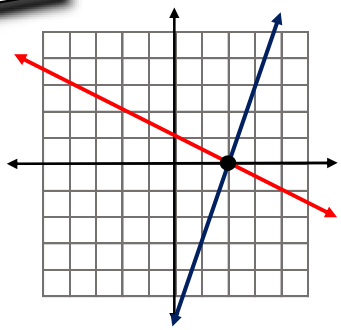
2. (4, 1); $\begin{cases} 3x - 4y = 8 \\ y = -3x - 6 \end{cases}$

SOLVE SYSTEMS BY GRAPHING

The solutions to a linear equation are on its graph. The solution to a **system** of linear equations is the point they share; thus, it is the point of _____.

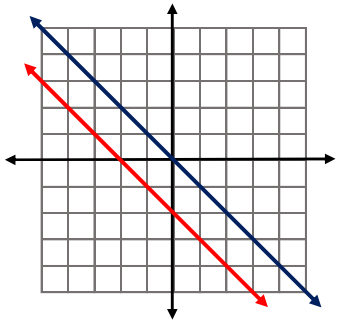
TYPES OF SOLUTIONS

Intersecting Lines



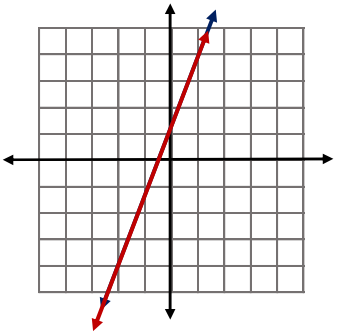
1 Solution

Parallel Lines



No Solution

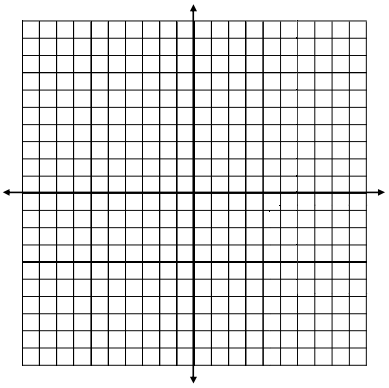
Coinciding Lines



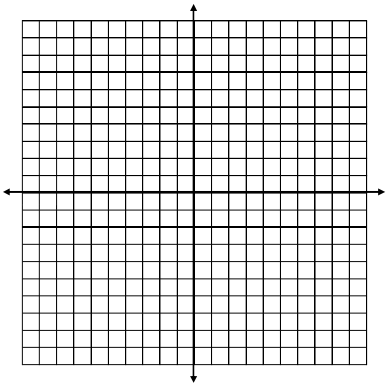
Infinitely Many Solutions

Solve each system of equations using the graphing method. State your solution as an ordered pair. Some answers may contain special solutions (i.e. No Solution or Infinitely Many Solutions).

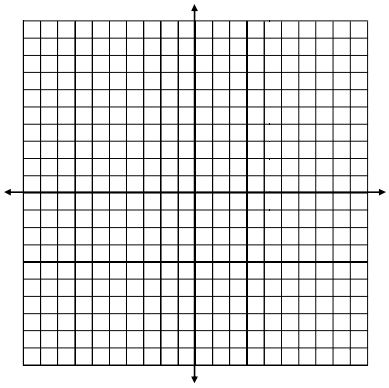
1. $\begin{cases} y = 4x - 3 \\ y = -2x + 3 \end{cases}$



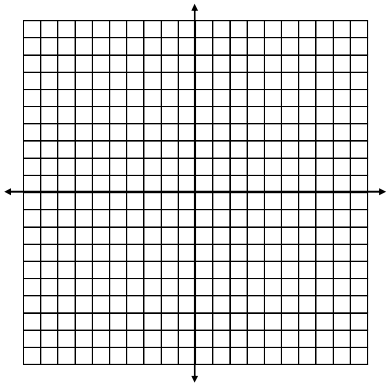
2. $\begin{cases} 4x - 2y = 8 \\ 3x + y = 1 \end{cases}$



3. $\begin{cases} y = x - 4 \\ x - y = 4 \end{cases}$



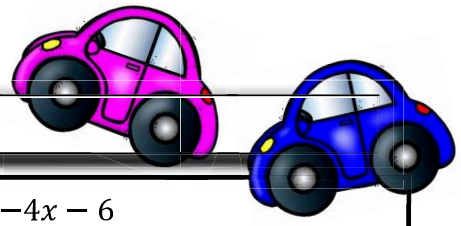
4. $\begin{cases} 2x - 5y = 15 \\ y = \frac{2}{5}x + 2 \end{cases}$



Name:_____ Date:_____Period:_____

A.___ SYSTEMS OF EQUATIONS

Solve by Graphing



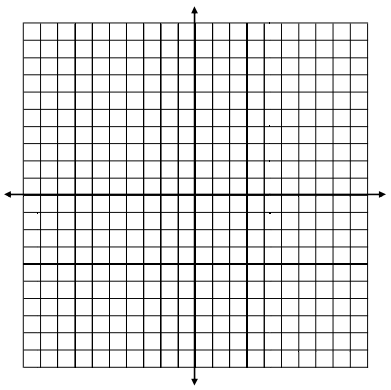
Determine if the given ordered pair is a solution to the system.

1. (6, -2); $\begin{cases} 7x - 6y = 3 \\ x + y = 4 \end{cases}$

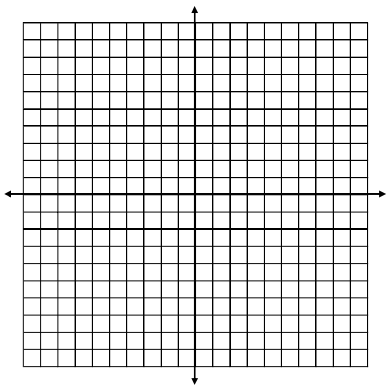
2. (-5, 14); $\begin{cases} y = -4x - 6 \\ 2x + y = 4 \end{cases}$

Solve each system of equations using the graphing method. State your solution as an ordered pair. Some answers may contain special solutions (i.e. No Solution or Infinitely Many Solutions).

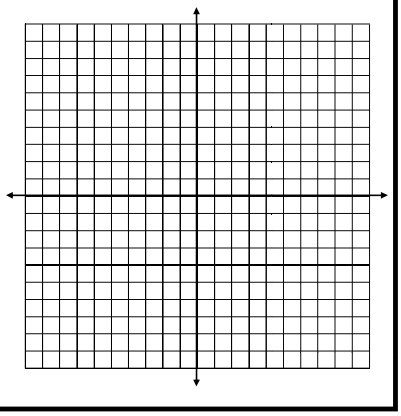
3. $\begin{cases} y = x + 2 \\ y = -x + 4 \end{cases}$



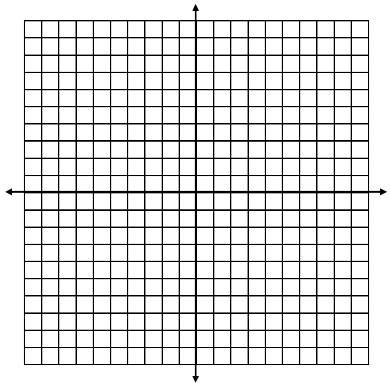
4. $\begin{cases} y = 3x - 3 \\ y = \frac{1}{2}x + 2 \end{cases}$



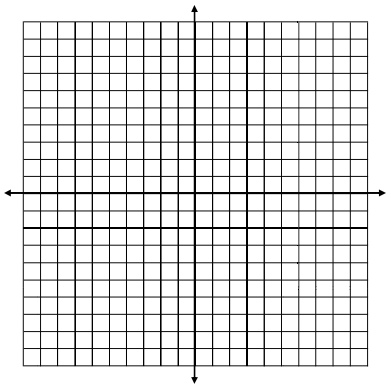
5. $\begin{cases} y = \frac{3}{4}x - 4 \\ 5x - y = 4 \end{cases}$



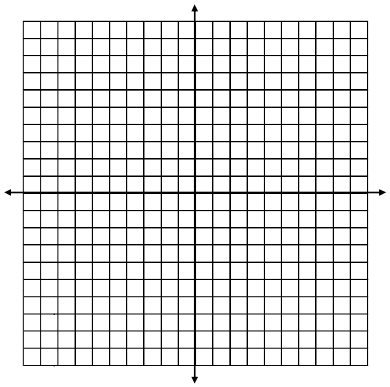
6. $\begin{cases} 2x + 3y = 9 \\ y = -\frac{2}{3}x + 2 \end{cases}$



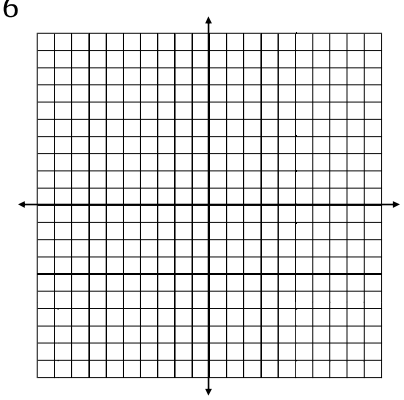
7. $\begin{cases} y = -4x \\ 6x + 2y = 4 \end{cases}$



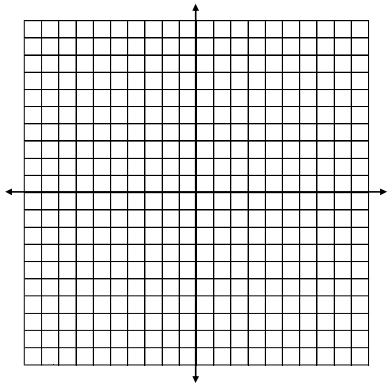
8. $\begin{cases} 6x + y = 2 \\ x + 3y = 6 \end{cases}$



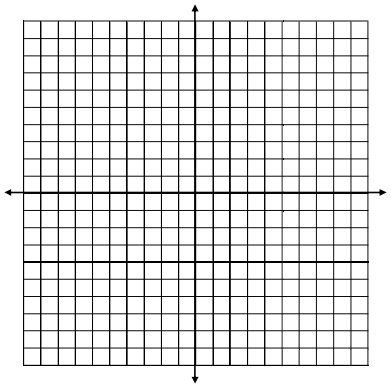
9. $\begin{cases} y = -\frac{3}{4}x + 2 \\ 6x + 8y = 16 \end{cases}$



10. $\begin{cases} x + y = -3 \\ y = \frac{1}{3}x + 1 \end{cases}$



11. $\begin{cases} y = \frac{3}{2}x + 4 \\ 2y = 2x \end{cases}$



12. $\begin{cases} 2x - y = 4 \\ y = -\frac{1}{2}x + 6 \end{cases}$