Guided Notes: Solving Systems of Equation by Graphing   Name:_____

DEFINITIONS:

• A **system of equations** is a set of _____ or more equations with the same _____.

• A **solution** to a **system of equations** is a set of values for the variables that _____ all the

   equations simultaneously (at the same time).

• The _____ of two graphed lines is the

   _____ to a system of equations.

SOLVING BY GRAPHING STEPS:

• **STEP 1:** Solve both equations for _____. In other words, put the equation in _____

   form, _____.

• **STEP 2:** Using the _____ and _____ graph

   both lines on the same coordinate plane.

• **STEP 3:** Find the _____ if it occurs. This

   _____ is the solution to the system.

EXAMPLE 1: $3x + y = 9$
                              $y = -x - 1$

Step 1: Solve by equations for y.

Which equation do we need to rewrite?_____

Step 2: Using the slope and y-intercept graph both lines on the coordinate plane.

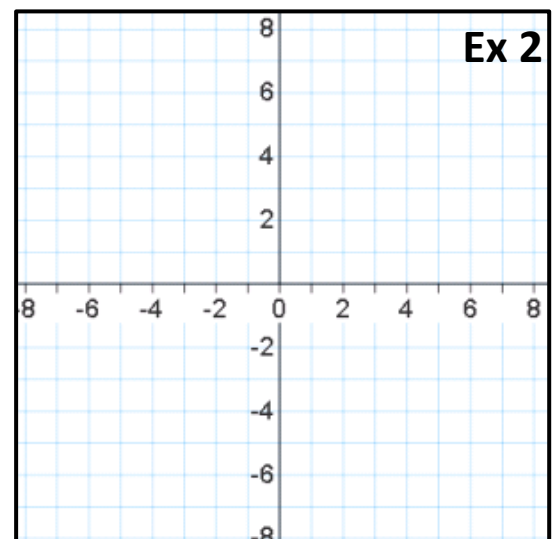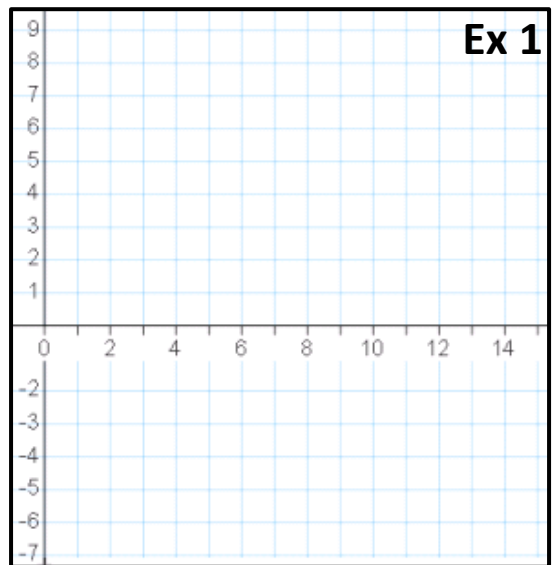*Step 3: Find the point of intersection if it occurs.* _____

EXAMPLE 2: $y = -2x + 3$
                              $-x + 2y = -4$

Step 1: Solve by equations for y.

Which equation do we need to rewrite?_____

Step 2: Using the slope and y-intercept graph both lines on the coordinate plane.

Step 3: Find the point of intersection if it occurs. _____
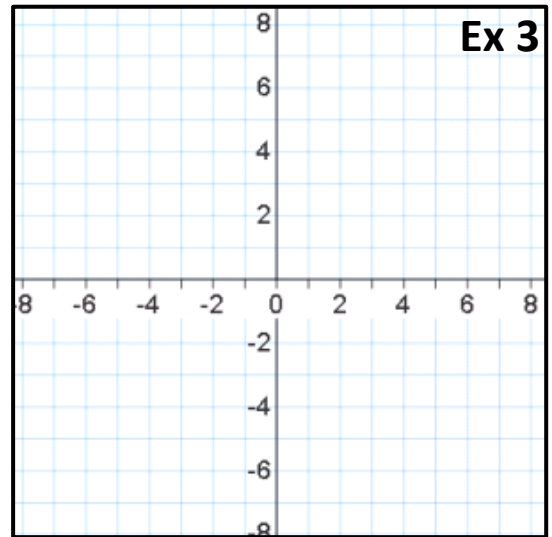
EXAMPLE 3: $y = \frac{1}{2}x - 1$
$6y - 3x = 6$

Step 1: Solve by equations for y.

Which equation do we need to rewrite?_____

Step 2: Using the slope and y-intercept graph both lines on the coordinate plane.

Step 3: Find the point of intersection if it occurs. _____

Ex 3

EXAMPLE 4: $y = \frac{2}{3}x - 4$
$2x - 3y = 12$

Step 1: Solve by equations for y.

Which equation do we need to rewrite?_____

Step 2: Using the slope and y-intercept graph both lines on the coordinate plane.

Step 3: Find the point of intersection if it occurs. _____

Ex 4
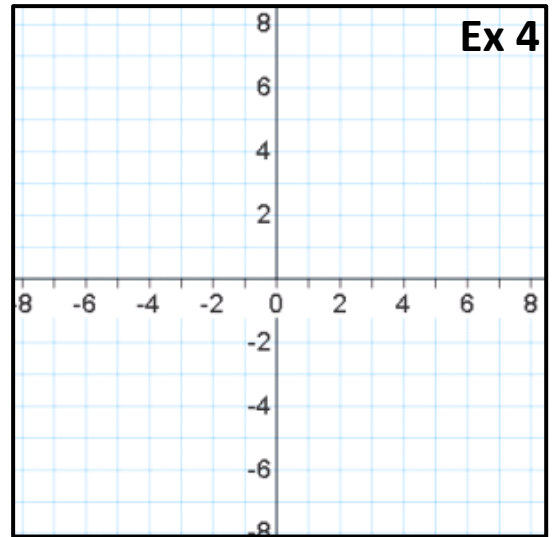
WORD PROBLEM:

Suppose you and your friends form a band. You want to record a demo. Studio A rents for $100 plus $50 per hour. Studio B rents for $50 plus $75 per hour.

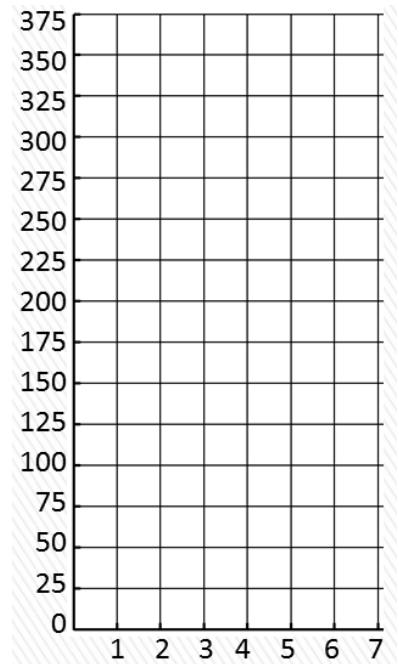a. Write an equation to represent the cost of each studio.

Studio A: _____

Studio B: _____

b. Solve the system by graphing.
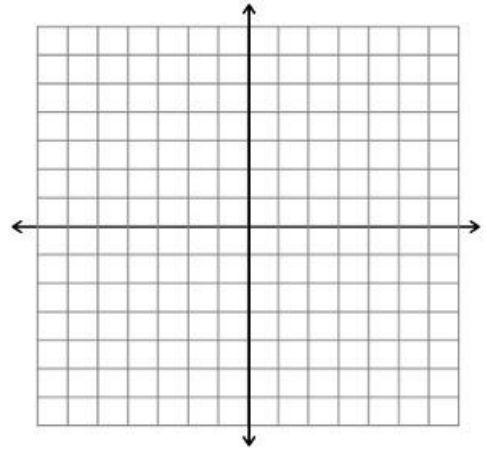
Solution: _____

c. Explain what the solution of the system means in terms of renting a studio. _____
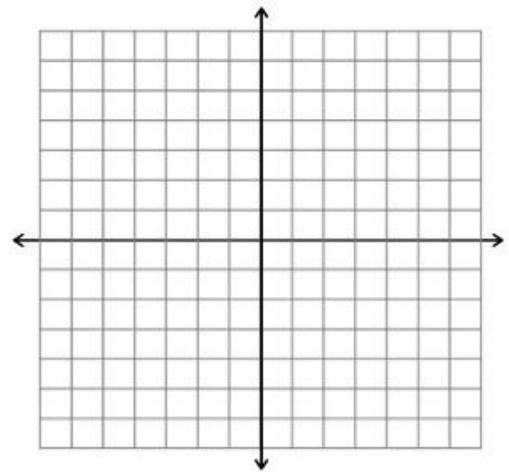
_____

Solving Systems of Linear Equations by Graphing Practice

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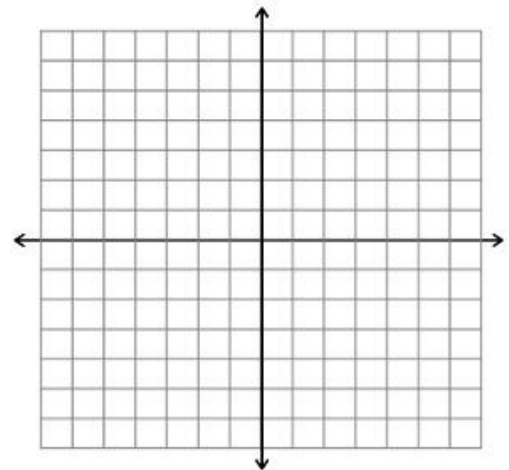 $y = \frac{2}{3}x + 3$

   Solution:_____
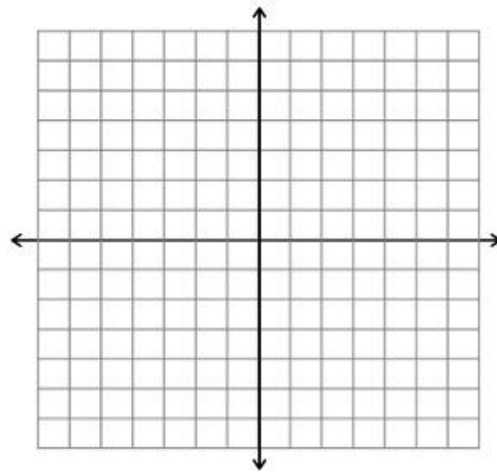
2. $y = -x + 3$
   $y = 2x - 6$
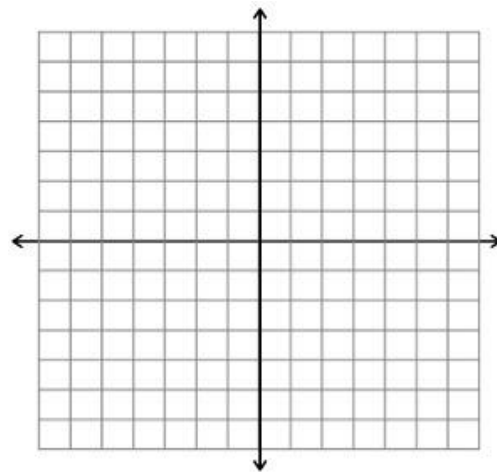
   Solution:_____

3. $y = 3x + 2$
   $6x - 2y = -4$

   Solution:_____

4. $2x - 3y = 9$

   $y = \frac{4}{3}x - 5$

   Solution:_____

5. $-2x + 4y = 12$

   $x - 2y = 6$

   Solution:_____