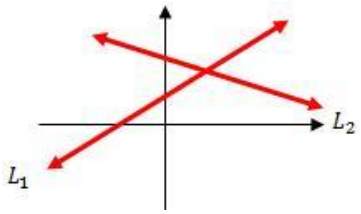
Lesson 3-1: Solving Linear Systems of Two Linear Equations by Graphing. ***LO:*** I can solve a Linear System of Two Linear Equations by Graphing

Date: _____

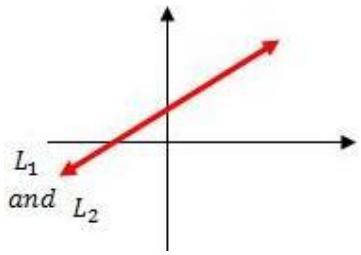
Number of Solutions of a Linear System (**Classifying the System**)

Intersecting Lines



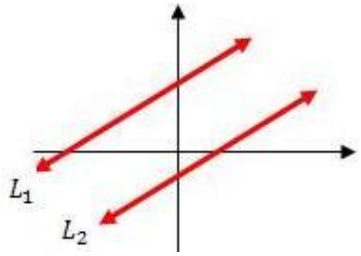
One Solution
different slopes &
different y-intercepts
Consistent &
Independent System

Same Line



Infinite Solutions
same slope &
same y- intercept
Consistent &
Dependent System

Parallel Lines



No Solution
same slope
but different y- intercepts

Inconsistent System

EX. 1 – Solving a Linear System by Graphing.

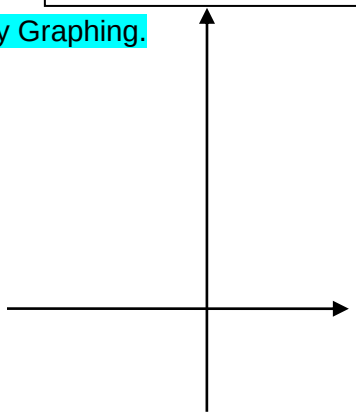
Solve the system by graphing.

a)

$$y = 3x + 7$$
$$y = \frac{1}{2}x + 2$$

x	y

x	y



Steps for graphing a System of Linear Equations

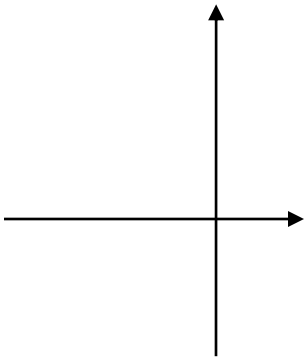
1. Graph both equations on the coordinate plane
2. Determine what type of system you have & state your solution:
   - If independent, **state & check your solution**
   - If dependent, your answer is **Infinite Solutions**
   - If Inconsistent, your answer is **No Solution**

b)

$$6x - 3y = -15$$
$$y = 2x - 3$$

x	y

x	y

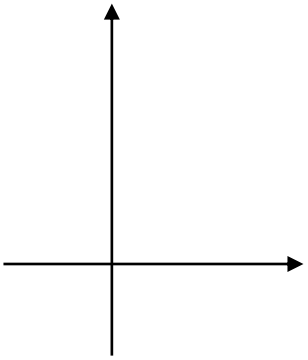


c)

$$2x - 4y = -2$$
$$y = -2x + 8$$

x	y

x	y



Short Summary #1:

Lesson 3-1: Solving Linear Systems of Two Linear Equations by Graphing. ***LO:*** I can solve a Linear System of Two Linear Equations by Graphing

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EX. 2 – Classifying a Linear System of Equations without Graphing.

2. Without graphing, Classify the system as Independent, Dependent or Inconsistent

a)

$$-3x + y = 4$$
$$x - \frac{1}{3}y = 1$$

Steps:

b)

$$x + 4y = 12$$
$$2x - 8y = 4$$

c)

$$2x + y = 4$$
$$-6x - 3y = -12$$

Short Summary #2:

Lesson 3-1: Solving Linear Systems of Two Linear Equations by Graphing. ***LO:*** I can solve a Linear System of Two Linear Equations by Graphing

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