Name: _____   **Date:** _____

Algebra: Module 1 – Lesson 20 (Solution Sets to Equations with Two Variables)

Do Now: Circle all the ordered pairs (x, y) that are solutions to the equation: 4x – y = 10

(3, 2)   (2, 3)   (-1 -14)   (0, 0)   (1, -6)   (5, 10)   (0, -10)

How did you decide whether or not an ordered pair was a solution to the equation?

Important Vocabulary:

Ordered Pair – A _____ to a two variable equation when each number

_____ into its corresponding variable makes the equation _____. An

ordered pair is written in the form (_____, _____).

Exercise 2

a.   Discover as many additional solutions to the equation $4x - y = 10$ as possible.   Consider the best way to organize all the solutions you have found.

b.   How many ordered pairs (x, y) will be in the solution set of the equation $4x - y = 10$?

c.   Create a visual representation of the solution set by plotting each solution as a point (x, y) in the coordinate plane.
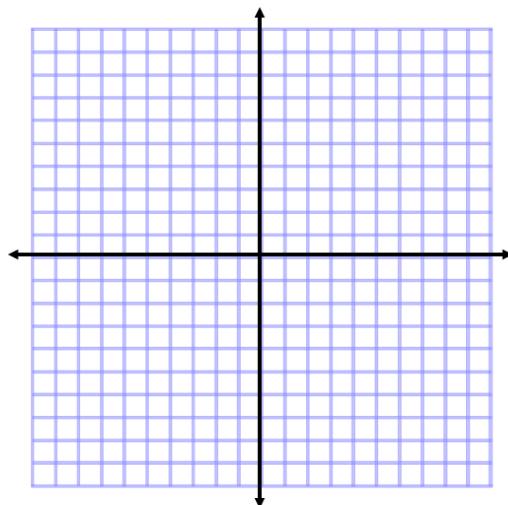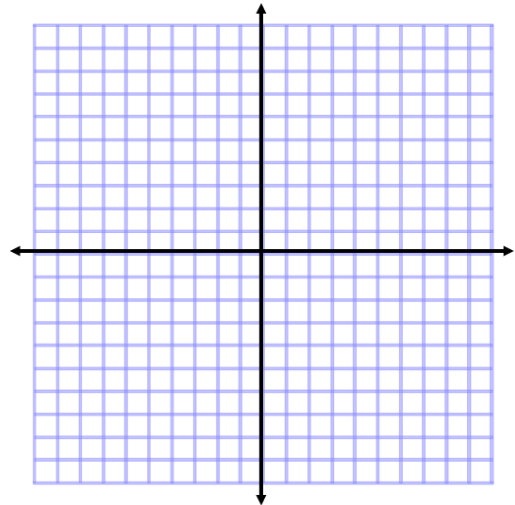
Exercise 3

The sum of two numbers is 25. What are the numbers?

   **How many answers are possible?

    a. Create an equation using two variables to represent this situation. Be sure to explain the meaning of each variable**.**

    b. List at least 6 solutions to the equation you created in part (a).

    c. Create a graph that represents the solution set to the equation.

Closure:

Is the graph of the line $y = 2x - 3$ the same as the solution set to the equation $y = 2x - 3$? Explain your reasoning.

Why is it useful to represent the solutions to a two-variable equation using a graph?

Problem Set
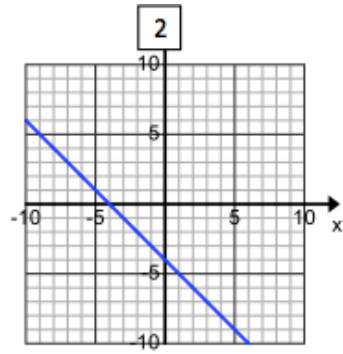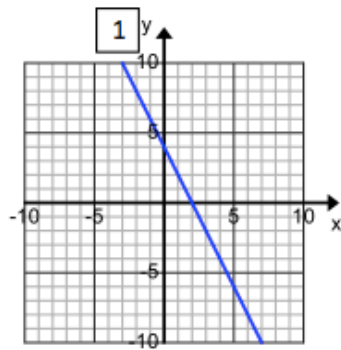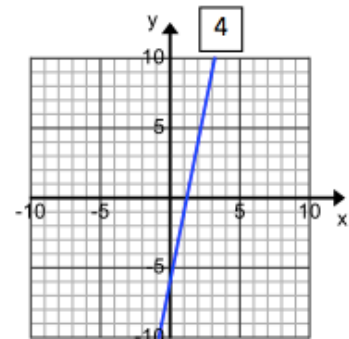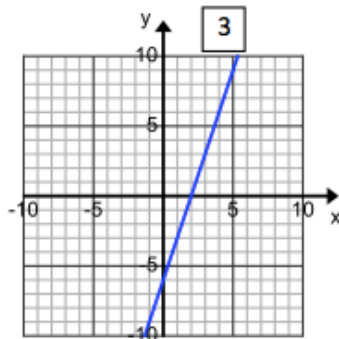
1. Match each equation with its graph. Explain your reasoning.

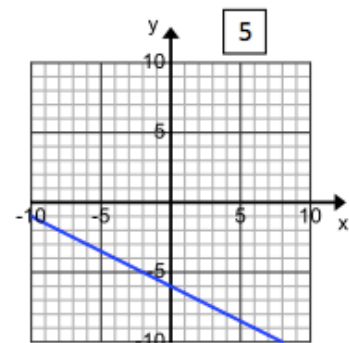   a. $y = 5x - 6$
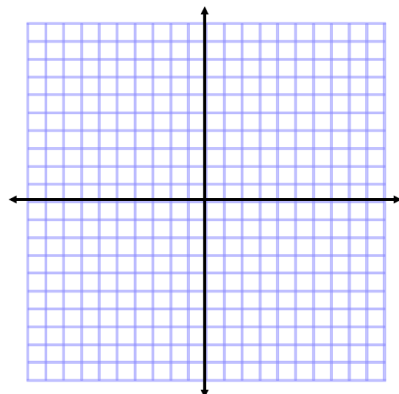
   b. $x + 2y = -12$

   c. $2x + y = 4$

   d. $y = 3x - 6$

   e. $x = -y - 4$

2. Graph the solution set in the coordinate plane. Label at least two order pairs that are solutions on your graph.

a. 10x + 6y = 60	b. 7x – 3y = 21