Lesson 1.4.4: Elimination Method

Targets:

1. I can solve a system of equations using the elimination method.

Warm Up

Here is a system of two linear equations. Verify that the solution to this system is $(3,4)$.

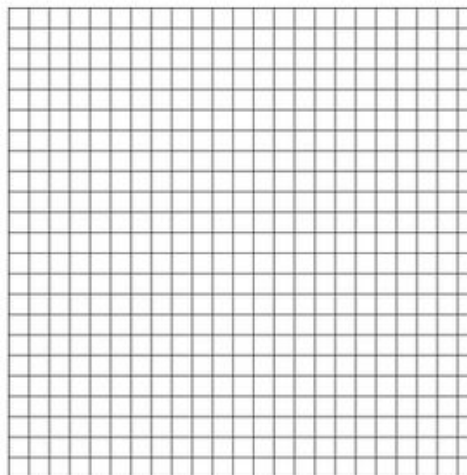Equation A1: $y = x + 1$

Equation A2: $y = -2x + 10$

Exploratory Challenge

a. Use Equation A1 and A2 (from the Warm Up) and graph them (if you haven't already).

b. Add A1 and A2 to create a new equation and name it A3.

c. Graph A3. What do you notice?

d. Does A3 share the same solution as A1 and A2?

e. What can you conclude about adding two equations together?

Introduction to the <u>Elimination Method</u>

Solve this system of linear equations algebraically.

ORIGINAL SYSTEM	NEW SYSTEM	SOLUTION
$2x + y = 6$		
$x - 3y = -11$		

Practice 1 and 2

1. Explain a way to create a new system of equations with the same solution as the original that eliminates variable y from one equation, and then determine the solution.

ORIGINAL SYSTEM	NEW SYSTEM	SOLUTION

$2x + 3y = 7$

$x - y = 1$

2. Explain a way to create a new system of equations with the same solution as the original that eliminates variable x from one equation, and then determine the solution.

ORIGINAL SYSTEM	NEW SYSTEM	SOLUTION

$2x + 3y = 7$

$x - y = 1$

Exit Ticket

1. What is the elimination method? Why is it called "Elimination" method?

2. Solve the following systems of equations using the elimination method.

   a. $-5x + y = 8$
      $2x - 7y = 10$

   b. $8x + 5y = 15$
      $9x + 2y = 6$