Wisdom Lane Middle School
Mr. Tomeo
Math 8

Name:_____

Period:_____ Date:_____

# Lesson: Solving Systems of Equations by Elimination (Day 2)

We are already familiar with solving a system of linear equations using **elimination.**

Review the **method of elimination:**

$$-7x + y = -10$$
$$-9x - y = -22$$

Look at the following system of linear equations.

How does this differ now from the review example above?

$$2x - y = 5$$
$$5x + 2y = -28$$

***Notes on Elimination Method***

Use the **method of elimination** to solve each of the following systems of equations. Be sure to find *x* **and** *y*.

**Exercise #1**

$$-6x + 5y = 22$$
$$2x + 3y = 2$$

**Exercise #2**

$$5x + 10y = 20$$
$$-6x - 5y = -3$$

**Exercise #3**

$$2x - 5y = 3$$
$$-6x + 15y = -9$$

Sometimes when you are using elimination to solve the equations we may need to multiply in **both equations.**

**Exercise #4**

$$5x-4y=15$$
$$2x+5y=6$$

**Exercise #5**

$$4x-5y=35$$
$$3x-4y=24$$

Practice solving each of the systems below using the **elimination method.** You will need to multiply **both** equations.

1.
$$3x+2y=-18$$
$$2x+9y=-12$$

2.
$$-4x+9y=-11$$
$$-3x+7y=-9$$

3.
$$-2x-7y=-13$$
$$3x+6y=15$$

**Application Problems**

7. A test has twenty questions worth 100 points. The test consists of True/False questions worth 3 points each and multiple choice questions worth 11 points each. How many multiple choice questions are on the test?

Equation 1: _____

Equation 2: _____

Solution: _____

8. Lisa goes to the mall one day and buys four shirts and three pairs of pants for $85.50. She returns the next day and buys three shirts and five pairs of pants for $115.00. What is the price of each shirt and each pair of pants?

Equation 1: _____

Equation 2: _____

Solution: _____

9. Kayla's school is selling tickets to the annual dance competition. On the first day of ticket sales the school sold 3 senior citizen tickets and 5 child tickets for a total of $70. The school took in $216 on the second day by selling 12 senior citizen tickets and 12 child tickets. Find the price of a senior citizen ticket and the price of a child ticket.

Equation 1: _____

Equation 2: _____

Solution: _____