**System of Equations**

* The answer to a system of equation is the intersection point between two lines
* The answer will be expressed in the form of an (x,y) coordinate

**Comparison Method**

-2x + y = 1
-3x + 2y = 9

**Step 1 – Change the equations so that they are in functional form (y=ax+b)**

-2x + y = 1 y = 2x + 1

-3x + 2y = 9 2y = 3x + 9 y = $\frac{3x}{2}$ + $\frac{9}{2}$ y = $\frac{3x}{2}$ + 4.5

**Step 2 – Set both equations equal to one another without the “y” variables**

2x + 1 = $\frac{3x}{2}$ + 4.5

y = 2x + 1
y = $\frac{3x}{2}$ + 4.5

**Step 3 – isolate the variable and solve**

2x + 1= $\frac{3x}{2}$ + 4.5 2x – $\frac{3x}{2}$ = 4.5 – 1 $\frac{1x}{2}$ = 3.5 $\frac{\frac{1x}{2} }{\frac{1}{2} }$ = $\frac{3.5}{\frac{1}{2}}$ X = 7

**Step 4 – Take the value for “x” and plug it into one of the equations to solve for “y”**

Y = 2x + 1 y = 2(7) + 1 y = 14 + 1 y = 15

**Step 5 – Your solution set (SS) is the x and y values in the form of (x,y)**

X = 7 y = 15
ss = (7, 15)

**Example #2**

y = -x +10

y = x + 2

**Step 1 – Change the equations so that they are in functional form (y=ax+b)**

y = -x +10

y = x + 2

**Step 2 – Set both equations equal to one another without the “y” variables**

Y = -x + 10
y = x + 2

-x + 10 = x + 2

**Step 3 – isolate the variable and solve**

-x + 10 = x + 2 -x – x = 2 – 10 -2x = -8 $\frac{-2x}{-2}$ = $\frac{-8}{-2}$ x = 4

**Step 4 – Take the value for “x” and plug it into one of the equations to solve for “y”**

y = x + 2 y = (4) + 2 y = 6

**Step 5 – Your solution set (SS) is the x and y values in the form of (x,y)**

X = 4 y =6
ss = (4, 6)

**Practice**

y = 3x – 6
y = x – 2

y = 1.5x + 7

y = -x – 3

x = 2y + 4
x = y – 1

2y = 6x + 10

6x + 2y = -2