1 Definition of Linear System

When a function only consists of x terms to the power of 1 and numbers, it's considered a linear equation.
Ex:

$$4x + 3 = 0$$

Typically, the objective when given a linear equation is to solve for x. Essentially, you want to isolate x so that it's by itself.

In order to isolate x in this example, the 3 must be moved over to the other side so that x can be alone.
Result:

$$4x = -3$$

Now to fully isolate x, the 4 has to be also be moved out of the way, so dividing both sides by 4 will do the trick.
Result:

$$x = -\frac{3}{4}$$

This is a simple example, so let's go over one with x on both sides of the equation.
Ex:

$$-4x + 7 = 2x - 1$$

The first step is to always add/subtract terms out of the way. So let's add 4x on both sides and add 1 on both sides.

Result:

$$8 = 6x$$

Finally, we can simplify the equation to get x completely by itself.

Result:

$$x = \frac{8}{6}$$

Reduce the fraction:

$$x = \frac{4}{3}$$

Self Practice Problems:

1)

$$3x - 8 = -2x + 1$$

2)

$$5x - 3 = -2x$$

3)

$$3 - x = 9x - 2$$