

2.1- ONE STEP ALGEBRAIC EQUATIONS:

***** The goal is to get numbers on one side of the equals sign and the variable on the other side.**

*****The coefficient of the variable will be a positive 1. *****

***** What you do on one side of the equal sign MUST ALSO be done on the other side of the equal sign.**

3 = 3 but does $3 + 1 = 3$? We added +1 to one side and the only way to keep both sides equal is to add +1 to the other side.

Example:

$$x + 2 = 5$$

1) Move numbers first using ADDITION or SUBTRACTION.
Next, move variables using ADDITION or SUBTRACTION.
Keep moving until the #s are on side of the equal sign and the variable on the other.

$$x + 2 - 2 = 5 - 2 \quad \text{this becomes } x = 3$$

CHECK: substitute the solution into the original equation.

$$3 + 2 = 5$$

2) $2x$ is the same as 2 times x

$2x = 6$ Get the coefficient to be a positive 1 by dividing each side by 2.

$$2x = 6$$

$$\frac{\text{----}}{2} \quad \frac{\text{---}}{2}$$

this becomes $x = 3$

3) x is divided by 2. Get the coefficient to be a positive 1 by multiplying each side by 3.

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

Get x by itself with a positive 1 coefficient by multiplying each side by 3:

$$\frac{x * 3}{3} = 4 * 3 \quad \text{The 3s cancel out leaving you with:}$$

$$x = 12$$

