Secondary 2
lesson 0.2

Solving Equations

Objective:

By the end of the lesson you will be able to:
Solve 1 and 2 step Equations with one variable.
Solve equations with the variable in more than one place.

Remember:

Solving an equation means finding the value of the variable that makes the equation true.

To solve an equation, we must isolate the variable on one side of the equation. We do this by creating ***equivalent equations***. When we perform the same operation to both sides of an equation, we create an equivalent equation. The operation we perform to both sides is the opposite of the operation that is already in the equation.

*When 'Solving for a Variable' just get that variable alone on one side of the equation.

Steps to solving equations

- Are there any parenthesis? Use the distributive property to get rid of them.
- Are there any like terms, including constants, that we can combine?
- Are there any fractions to clear? Multiply both sides by the denominator(s).
- Is there a number that is added or subtracted with the variable? Use its additive inverse to get rid of it.
- Is the variable multiplied or divided by a number? Use its inverse to get rid of it.

Basically, you start on the side with the variable and get rid of everything else on this side of the equation.

One Step Examples:

1) $3x = 6$

2) $x + 2 = 8$

3) $\frac{x}{2} = 6$

4) $x - 4 = 8$

Two Step Examples:

5) $4x - 7 = 9$

6) $11 = 2x - 3$

7) $\frac{6}{x} = 3$

8) $\frac{x+3}{2} = 6$

8) $6 = \frac{2x - 6}{2}$

10) $-16 = \frac{14}{x} - 2$

Think ‘combine like terms’. This means get x’s together and get numbers together. How do we do this?

Example:

11) $13x + 2 = 4x + 38$

12) $4x - 3 = 2x + 3$

13) $4 - 2x = 6x + 3$

Sometimes you have the same variable on the same side of the equation. DO NOT solve this the same way (by subtracting). Simply start the problem by combining the like terms.

$Example\ 14$: $2x + 4x + 6 = 12$

15) $20 - 3x + 4 - x = 44$

16) $4x - 6 + 12x = 26$

Can You:

*Solve 1 and 2 step Equations with one variable

*Solve equations with the variable in more than one place

???

Assignment:

Packet 0.2

Due at the start of next class