Math 9 Review – Part 3
Solving Equations

Solving Equations

When we solve an equation, we are trying to find the value of a variable that makes a mathematical sentence (equation) true.

In order to solve an equation, we must isolate the variable.

Example 1: Solve the following equations.

a) $5x - 4 + 3 = 4$

b) $6x - 10 = 56$

c) $2 = 4x - 5x$

d) $9a = 3a - 36$

Solving Equations with Parentheses
- Expand the parentheses
- Simplify like terms (if possible)
- Isolate the variable

Example 2: Solve the following equations:

a) $2(y - 4) = 16$

b) $10 + 2x = -4(x - 1)$

c) $4(x-3)+9x=-38$

d) $3-(2+4x)=4+2(3x+1)$

Verify (check) Your Solution

Once a solution is found, we must verify that it is correct. This is done by substituting the solution back into the original equation.

Example 3: Verify that $x=7$ is a solution to the following equation: $2(3x-5)=32$

Solving Equations – Worksheet #3

1. Solve the following equations. Show all of your work.

a) $118 = 2(8x+3)$

b) $-8(-5n-3) = -256$

c) $-7x - 8(1+x) = 8x + 15$

d) $88 = 4x - 6(2x-4)$

e) $6x - 33 = 3 - 6(1-2x)$

f) $2(1+4k) - 3k = 3(k+8)$

2. Solve the following equations. Verify each solution. Show all of your work.

a) $3(3r+8)=3(7+4r)$

b) $5(1+2x)=6x-15$

c) $-18+7x=-5x+5(7x+1)$

d) $6(8m-1)=2+7(7m-3)$