Algebra 2- Remediation

Unit 1 Lesson 1 Day 3:Function Composition

- Write the composition of two functions
- Evaluate the composition of two functions

Function Composition: Placing one whole function into the other function's variable.

$$(f\,o\,g)(x) = f\left(g(x)\right)$$

On this one, plug all of g(x) into your variable for the f function.

$$(g\,o\,f)(x) = g\left(f(x)\right)$$

For this, plug all of f(x) into your g(x) variable.

$f(x) = x^2$ $g(x) = 2x - 1$ $h(x) = 4x - 3$

Ex 1: g(f(x)) plug f(x) in for x on g(x)

$2(x^2) - 1$

$2x^2 - 1$

Ex 2: f(g(x))

$(2x-1)^2 = (2x-1)(2x-1)$

$4x^2 - 2x - 2x + 1$

$4x^2 - 4x + 1$

Ex 3: (h(g(x))

$4(2x-1) - 3$

$8x - 4 - 3$

$8x - 7$

Ex: let $f(x)=3x-4$ and $g(x)=x^2-2x+6$

a. $(f\,o\,g)(x)=$ $f(g(x))$

$3(x^2-2x+6)-4$

$3x^2-6x+18-4=\boxed{3x^2-6x+14}$

b. $(g\,o\,f)(x)=$

$(3x-4)^2-2(3x-4)+6$

$(3x-4)(3x-4)-2(3x-4)+6$

$9x^2-12x-12x+16-6x+8+6$

$\boxed{9x^2-30x+30}$

-12
-12
-6

16
8
6

16
14
30

Assignment:

You have an EXIT ticket that must be completed and turned in before you leave TODAY!