Algebra 2- Remediation

Unit 1 Lesson 1 Day 1:Function Notation

- Understand function Notation
- Evaluate functions for given values and expressions

$g(x) =$ $h(x) =$

Functions have names. The function *f*(x) is a function named *f* with a variable x and it is read "*f* of x".

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

Function notation.

- f(x), g(x), h(x)
- you can use any letter except the one that is representing your variable (x)
- f(x)=5x+3 is the same as y=5x+3

- f(#) means that you are going to substitute the given # into each x in your function

Given f(x)=2x-3

Evaluate f(3) this is saying plug 3 in for x

$$f(3) = 2(3) - 3$$

$$= 3$$

Now you try. ~~PEMDAS~~ REMDAS

Given $g(x) = -2x^2 + 5$

Evaluate g(3)

$= -2(3)^2 + 5$

$= -2(9) + 5 = -18 + 5 = -13$

Given $f(x) = -x^3 - 2x^2 + x - 4$

Evaluate f(-1) $= -(-1)^3 - 2(-1)^2 + (-1) - 4$

$= -1(-1) - 2(1) - 1 - 4$

$= 1 - 2 - 1 - 4$

$= -6$

Evaluating with an expression.

Given f(x)=2x-3

Evaulate for f(5x)

This may seem harder on the surface, but you still just replace the x in the f function with "5x"

$$f(5x) = 2(5x) - 3$$

$$= 10x - 3$$

. Given f(x)=3x-4

Evaluate f(2x+1)

$3(2x+1)-4$

$6x+3-4$

$6x-1$

: Given $f(x)=-x^3-2x^2+x-4$

Evaluate f(-x)

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

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

x^3-2x^2-x-4

No more like terms to combine

Problems that require you to FOIL

Remember FOILing is just distributing completely. FOIL stands for First, Outside, Inside, Last

Lets Practice FOILing first!

Simplify $(2x+1)(x-5)$

$2x^2 - 10x + 1x - 5$

$2x^2 - 9x - 5$

Given $g(x) = -2x^2 + 5$

Evaluate g(p+1)

$-2(p+1)^2 + 5$

$(p+1)(p+1)$

$p^2 + 1p + 1p + 1$

$p^2 + 2p + 1$

$-2(p^2 + 2p + 1) + 5$

$-2p^2 - 4p - 2 + 5$

$-2p^2 - 4p + 3$

Example: $f(x) = x^2 - 1$

Evaluate f(x+1)

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

$(x+1)(x+1)$

$x^2 + x + x + 1$

$x^2 + 2x + 1$

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

$= x^2 + 2x$

Assignment:

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