Algebra 2- Remediation

Unit 1 Lesson 1 Day 2:Function Operations

- Add, Subtract and Multiply functions

Review: Simplify each of the following.

Ex 1: (4x+3)(5x-1)

$$20x^2 - 4x + 15x - 3$$

$$\boxed{20x^2 + 11x - 3}$$

Ex 2: $19x - 4x^2 + 9x^3 - 20x + 8x^2$

$$9x^3 + 4x^2 - 1x$$

Ex 3: $(9x)^2$

$$(9x)(9x) = \boxed{81x^2}$$

Ex 4: 3x-(5x+3)

$$3x - 5x - 3$$

$$\boxed{-2x - 3}$$

Adding Functions:

$$f(x) = x^2 + 3x + 1 \qquad g(x) = -2x^2 + 5$$

$$h(x) = 4x \qquad j(x) = 2x^3 - 4x^2 + 5x + 1$$

Ex 1: $(f+g)(x) = f(x) + g(x)$

$$x^2 + 3x + 1 + -2x^2 + 5$$

$$-1x^2 + 3x + 6$$

Ex 2: (f+j)(x)

$$x^2 + 3x + 1 + 2x^3 - 4x^2 + 5x + 1$$

$$-3x^2 + 8x + 2 + 2x^3$$

Ex 3: (g+j)(x)

Subtracting Functions:

$$f(x) = x^2 + 3x + 1 \qquad g(x) = -2x^2 + 5$$

$$h(x) = 4x \qquad j(x) = 2x^3 - 4x^2 + 5x + 1$$

Ex 1: $(f-g)(x) = f(x) - g(x)$

$$x^2 + 3x + 1 - (-2x^2 + 5)$$

$$x^2 + 3x + 1 + 2x^2 - 5$$

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

Ex 2: (j-f)(x)

$$2x^3 - 4x^2 + 5x + 1 - (x^2 + 3x + 1)$$

$$2x^3 - 4x^2 + 5x + 1 - x^2 - 3x - 1$$

$$2x^3 - 5x^2 + 2x$$

Ex 3: (h-g)(x)

$$4x - (-2x^2 + 5)$$

$$4x + 2x^2 - 5$$

Multiplying Functions:

$$f(x) = x^2 + 3x + 1 \qquad g(x) = -2x^2 + 5$$

$$h(x) = 4x \qquad j(x) = 2x^3 - 4x^2 + 5x + 1$$

Ex 1: $(fg)(x) = f(x) * g(x)$

$$(x^2 + 3x + 1)(-2x^2 + 5)$$

$$-2x^4 + 5x^2 - 6x^3 + 15x - 2x^2 + 5$$

$$-2x^4 + 3x^2 - 6x^3 + 15x + 5$$

Ex 2: h(x)*g(x)

$$4x(-2x^2 + 5)$$

$$-8x^3 + 20x$$

Ex 3: h(x)*j(x)

$$4x(2x^3 - 4x^2 + 5x + 1)$$

$$8x^4 - 16x^3 + 20x^2 + 4x$$

Assignment:

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