Algebra 1 ECA Remediation Lesson 23

Multiplying Polynomials

When multiplying two binomials, use the FOIL method. FOIL stands for:

F – First, **O** – Outer, **I** – Inner, **L** – Last

Example #1

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

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

Outer - (2x)(-5) = -10x

Inner - (3)(x) = 3x

Last - (3)(-5) = -15

After all multiplication is done, add all terms together. Combine those that can be combined and then put the trinomial in standard form.

$$2x^2 - 7x - 15$$

Example #2

$$(x - 4)^2$$

X^2 means to multiply the base by itself (x)(x). This rule applies to the example above.

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

From here we can use the FOIL method to expand the product.

First - (x) (x) = x^2

Outer - (x)(-4) = -4x

Inner - (-4)(x) = -4x

Last - (-4)(-4) = 16

The resulting product is $x^2 - 8x + 16$

WARNING!!!

A common mistake is to square both terms in the binomial base. For instance:

$(x - 4)^2 \neq x^2 + 16$

Remember all squared binomial products will have THREE terms!