

# 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!\*\*\*