Name: _____ Date: _____

More Complex Equivalency

We should now have a better ability to work with exponents. In this lesson we will continue to explore expressions that are **equivalent** but look different. We will be primarily sticking with linear expressions (those where x is only raised to the first power) and quadratic expressions (where x is raised to the second power). Recall that two expressions are **equivalent** if they return equal values when values are substituted into them.

***Exercise* #1:** Consider the product $(x-2)(x+5)$. It is equivalent to one of the expressions below. Determine which by substituting in two ~~values of x to check~~.

	$(x-2)(x+5)$	x^2-10	$x^2+3x-10$
$x=3$	$(3-2)(3+5)$ $(1)(8)$ 8	$(3)^2-10$ $9-10$ -1	$(3)^2+3(3)-10$ $9+9-10$ $18-10=8$
$x=5$	$(5-2)(5+5)$ $(3)(10)$ 30	$(5)^2-10$ $25-10$ 15	$(5)^2+3(5)-10$ $25+15-10$ $40-10$ 30

P E → MD → AS

The last exercise is pretty interesting. It would seem that if you were just **mindlessly manipulating** the product of the two binomials, then you would likely think two expressions were equivalent, when they are not. Let's find out in the next exercise how to multiply out two simple binomials using a variety of properties.

Keep in mind that below you are simply doing the distributive property twice.

***Exercise* #2:** Write out each of the following as equivalent trinomials (an expression involving three terms).

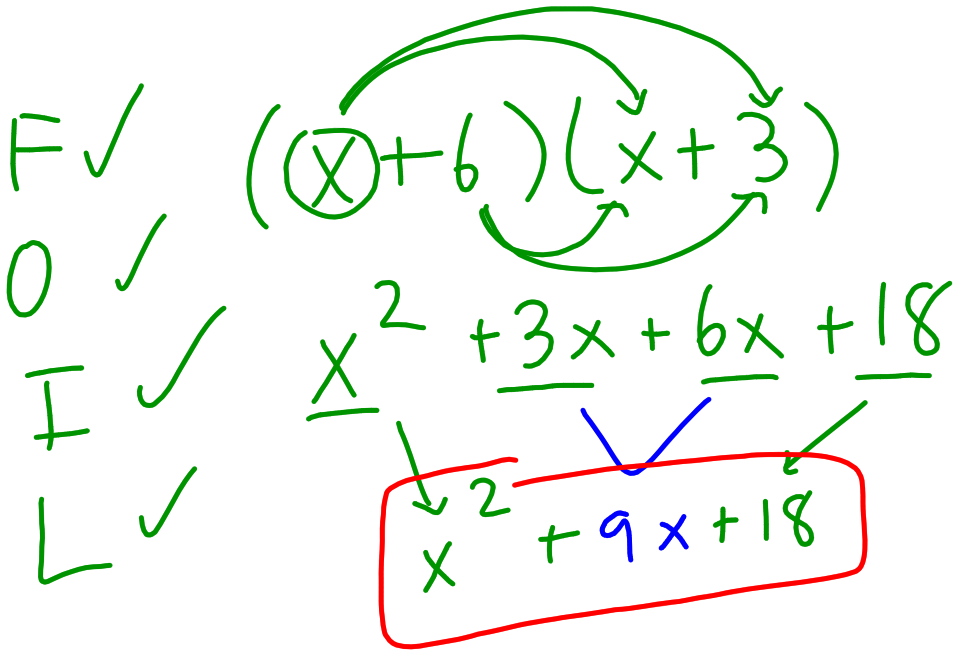
(a) $(x+6)(x+3)$ ↑ ↑ Binomials

(b) $(x-4)(x+6)$

(c) $(x-3)(x-3)$

First/Front
Outside
Inside
Last

$x^2+9x+18$


F ✓
O ✓
I ✓
L ✓
(x+6)(x+3)
x² +3x +6x +18
x² +9x +18