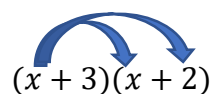


Multiplying Polynomials #5 Notes

Example 1: Multiplying Polynomials

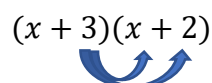
$$(x + 3)(x + 2)$$

We are essentially going to use the distributive property for each term in the first parentheses.


$$(x + 3)(x + 2)$$

We start by multiplying the first x into both terms in the second set of parentheses.

$$x \cdot x + x \cdot 2$$


$$(x + 3)(x + 2)$$

Then we will multiply the 3 into both terms in the second set of parentheses and add those onto what we got in the first step.

$$x \cdot x + x \cdot 2 + 3 \cdot x + 3 \cdot 2$$

Now, we simplify.

$$x^2 + 2x + 3x + 6$$

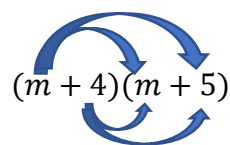
Combine like terms.

$$x^2 + 5x + 6$$

This is our solution.

Example 2: Multiplying Polynomials

$$(m + 4)(m + 5)$$


$$(m + 4)(m + 5)$$

Multiply the first m through the m and 5, and then do the same with the 4

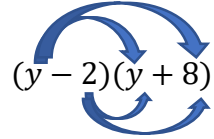
$$m \cdot m + m \cdot 5 + 4 \cdot m + 4 \cdot 5$$

$$m^2 + 5m + 4m + 20$$

$$m^2 + 9m + 20$$

Example 3: Multiplying Polynomials

$$(y - 2)(y + 8)$$



Multiply the first y through the y and 8 , and then do the same with the -2

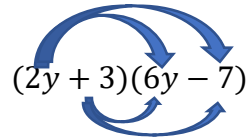
$$y \cdot y + y \cdot 8 + -2 \cdot y + -2 \cdot 8$$

$$y^2 + 8y - 2y - 16$$

$$y^2 + 6y - 16$$

Example 4: Multiplying Polynomials

$$(2y + 3)(6y - 7)$$



Multiply the $2y$ through the $6y$ and -7 , and then do the same with the 3

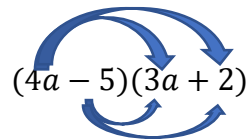
$$2y \cdot 6y + 2y \cdot -7 + 3 \cdot 6y + 3 \cdot -7$$

$$12y^2 - 14y + 18y - 21$$

$$12y^2 + 4y - 21$$

Example 5: Multiplying Polynomials

$$(4a - 5)(3a + 2)$$



Multiply the $4a$ through the $3a$ and 2 , and then do the same with the -5

$$4a \cdot 3a + 4a \cdot 2 + -5 \cdot 3a + -5 \cdot 2$$

$$12a^2 + 8a - 15a - 10$$

$$12a^2 - 7a - 10$$