

# Multiply Polynomials

## Objective:

By the end of the lesson you will be able to multiply polynomials

## Multiplying Polynomials

To multiply polynomials, we multiply each term in the first polynomial by each term in the second polynomial (use the Distributive property), then combine like terms if there are any.

For example:  $a(b+c+d) = a(b) + a(c) + a(d)$

Simplify the following:

1)  $7(2m^2 + 5)$

2)  $-3(8m^2 - 4m)$

3)  $9(4a^2 - a + 2)$

4)  $3a(12 + 5a - a^2)$

Remember: when you multiply things like  $a(a^2)$  you add the exponents. So  $a(a^2)=a^3$ .

Simplify the following:

5)  $x^2y(x^2 - y^2)$

6)  $8c^2d^2(3c^4d^3 + 10c^3d^4 + 11)$

7)  $3cd^4(2c^4 - 5c^2d^2 - 18d^4)$

8)  $-5xy^2(-x^3y + 4xy^3)$

To simplify the following you just use distributive property twice, then combine like terms if there are any:

9)  $(n + 2)(n + 5)$

10)  $(n + 4)(n + 9)$

Simplify the following:

$$11) (3x + 2)(5x + 1)$$

$$12) (9x - 2)(4x - 4)$$

Simplify the following:

13)  $(t + 2)(t^2 + 4t - 3)$

14)  $(2t - 3)(3t^2 + 2t + 5)$

## Wrap up

Can you multiply a monomial and a polynomial: \_\_\_\_ ( )?

Can you multiply polynomials: ( ) ( )?

(Remember to combine exponents by addition.)

## Assignment:

#0.5 in the packet and MathXL

Due next class