

Polynomials

Review like Terms (when +/- you need like terms)
 Exponents don't change

$$\text{Ex: } (3x^2 + y) - (2x^2 + z)$$

$$3x^2 + y - 2x^2 - z$$

$$\boxed{x^2 + y - z}$$

Multiplying Polynomials (Exponents Change)

$$\text{Ex: } (3x + 5)(2x - 2)$$

FOIL

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

$$6x^2 - 6x + 10x - 10$$

$$\boxed{6x^2 + 4x - 10}$$

$$\text{Ex: } (2x^2 + 3y)(x^3 - 4xy + y^3)$$

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

$$2x^5 - \cancel{8x^2y} + 2x^2y^3 + \cancel{3yx^3} - 12xy^2 + 3y^4$$

$$\boxed{2x^5 - 5x^2y^3 - 12xy^2 + 3y^4}$$