

# Guidelines for Adding, Subtracting, and Multiplying Polynomials

## Adding Polynomials

Parentheses do not change the problem. Combine like terms – variable(s) must raised to the same power – if so, combine coefficients. Exponents do not change.

- Examples -

$$(2x^2 - 4x + 4) + (-2x^2 - 5x + 4) =$$

$$(7x^3 + 6x^2 - 2x) + (9x^2 - 4x + 3) =$$

## Subtracting Polynomials

All signs for each term must be switched in the set of parentheses that follow the subtraction sign. Then follow the rules for adding polynomials.

- Examples -

$$(2x^2 - 4x + 4) - (-2x^2 - 5x + 4) =$$

$$(7x^3 + 6x^2 - 2x) - (9x^2 - 4x + 3) =$$

## Multiplying Polynomials

When multiplying two polynomials, you are just using the distributive property multiple times. When multiplying two binomials, this is called the FOIL method. We used the box method.

- Examples -

$$(2x^2 - 4x + 4) (-2x^2 - 5x + 4) =$$

$$(4x - 5) (3x + 7) =$$

On a sheet of notebook paper, summarize in your own words the process for adding, subtracting, and multiplying polynomials. Create an example for each type and find each answer. What are some special cases of multiplying two binomials? Write an example of each and find the answers using the short cut.