

# ***Polynomial Addition and Subtraction***



A **Polynomial** is an expression which contains more than multiple algebraic terms i.e. the expression is the sum of several algebraic terms with different powers of the variable(s).

Examples:  $5x^2+6x-2$      $3x^2-4x+5$

## **POLYNOMIAL ADDITION**

### **Example**

Add  $4x^2-5x+3$  and  $2x^2+3x-1$

$$(4x^2-5x+3)+(2x^2+3x-1) = (4x^2+2x^2)+(-5x+3x)+(3-1)$$

Combining Like Terms

$$= 6x^2+(-2x)+(2)$$

Addition or Subtracting like terms

$$= 6x^2-2x+2$$

The terms cannot be added or subtracted more.

## **POLYNOMIAL SUBTRACTION**

### **Example**

Subtract  $5x^2-2x+4$  from  $3x^2+7x-6$

$$(3x^2+7x-6)-(5x^2-2x+4) = (3x^2+7x-6)+(-5x^2+2x-4)$$

Rewriting as addition

$$= (3x^2-5x^2)+(7x+2x)+(-6-4)$$

Combining Like Terms

$$= -2x^2+(9x)+(-10)$$

Addition or Subtracting like terms

$$= -2x^2+9x-10$$

The terms cannot be added or subtracted more.

**Meets: Common Core Standard High School – HSA-APR.A.1**