

## Adding and Subtracting Polynomials

### **What is a POLYNOMIAL ?**

A polynomial is an algebraic expression containing several terms. Each term is comprised of numerical coefficients and variable coefficients.

### **EXAMPLES of polynomials:**

Monomial	$4x^2$	$12a^3b^2$	$-y^5$
Binomial	$2x^2 + 3x^5$	$a - b$	$5y - 2x$
Trinomial	$3x^2 + 5x - 2$	$a - 3b + c$	

**Simplify each of the following:**

**Example 1:**  $7x^2 + 3x - 4x^2 + 8x$

**Example 2:**  $4x^4 - 3x^3y + 2x^3 + x^4 - x^3y$

**Example 3:**  $(2x^2 + 3x - 4) + (5x^2 - x + 6)$

**Example 4:**  $(5m^2 - 3mp + 7p^2) - (3m^2 - 11mp + 21p^2)$

**Example 5:**

Subtract  $3k^3 - 2k^2$  from the sum of  $4k^3 - k^2 - 4$  and  $-k^3 + 3k^2 + 1$

**Example 6:**  $\left(\frac{1}{2}x + \frac{1}{5}y\right) - \left(\frac{1}{4}x - y\right)$ **Example 7:**

Determine if the following two functions are equivalent:

$$f(x) = (x^2 - 3x) - (2x^2 + 5)$$

and

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

**Homework :**

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