

Alg I 8.1 notes.notebook

8.1 Adding and Subtracting Polynomials

A monomial is a real number, variable, or product thereof. Examples include -7 , $5x$, $-2xy$ and x^2yz .

The degree of a monomial is the sum of the exponents of the variables.

1st degree --> $4x$, $-7y$, w

Examples: 2nd degree --> x^2 , $-4y^2$, $6xy$

3rd degree --> x^3 , $5x^2y$, $-3xy^2$

What is the degree of the monomial?

1) $4x^3$ 2) -17 3) $2x^2y^5$ 4) xyz^3

A **polynomial** is a broad term that describes one or more monomials that are added or subtracted. The **standard form** of a polynomial means the degree decreases from left to right. The **degree of a polynomial** is the same as the degree of the term with the highest degree.

5	0	constant	monomial
$2x-3$	1	linear	binomial
x^2+x-3	2	quadratic	trinomial
$-5x^3$	3	cubic	monomial
x^4-x^2+7	4	4th degree	trinomial

Write the polynomial in standard form. Also, name the polynomial based on its degree and number of terms.

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

6) $3x - 7x^3$

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To add or subtract polynomials only like terms can be combined. We can choose a horizontal or vertical method to do this.

Simplify.

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

$$8) (3x^3 - 9x + 5) + (2x^3 - 7)$$

Simplify.

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

$$10) (7x^2 - 3x + 2) - (10x^2 - 3x)$$