

9.1 Intro to Polynomials

- The degree of a polynomial is the highest exponent
- Standard form: When the polynomial is written highest degree to lowest degree

$$4x^2 + 3$$

$$4x^3 + 3x^2 - 2x + 4$$

$$3 - 2x^4 + 6x$$

$$-2x^4 + 6x + 3$$

Classifying Polynomials

Number of Terms

1: Monomial Ex: $4x, 2, 6x^2$

2: Binomial Ex: $3x^4 - 1, 2x + 3$

3: Trinomial Ex: $2x^2 + 3x - 4$

4: Quadnomial Ex:
 $6x^5 + 3x^2 - 2x + 1$

Degree

0: Constant Ex: $4, 6, -3,$

1: Linear Ex: $3x + 4$

2: Quadratic Ex: $x^2 + 2x + 4$

3: Cubic Ex: $3x^3 - 1$

4: Quartic Ex: $x^4 + 2x$

Examples of Classifying Polynomials

$3x^3 + 6x - 1$ cubic trinomial

$6x$

linear monomial

$6x^4 - 4$

quartic binomial

$3x^7 + 4x^3 - 2x + 1$

7th degree-quadnomial

Adding Polynomials: (combining like terms)

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

$$6x^3 + 3x^2 - 7x + 1$$

$$(7x^4 + 3x^2 - 8) + (2x^3 - 4x^2 + 7)$$

$$7x^4 + 2x^3 - x^2 - 1$$

Subtracting Polynomials: (distribute negative and combine like terms)

$$(3x^2 + 4) - (2x^2 + 7x - 1)$$

$$3x^2 + 4 - 2x^2 - 7x + 1$$

$$x^2 - 7x + 5$$

Homework:

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