

Algebra 1 8.1

Write polynomials in standard form

Add and subtract polynomials

monomial

polynomial

binomial

trinomial

degree (of a monomial)

degree (of a polynomial)

activ: algebra tiles

whiteboards

5 in a row

number, variable or product

$$3 + n - 6x + 3x^3$$

$$x^2 a^2 + a^3 + 5x^3 - 2x^1$$

Monomial

$$5x$$

Binomial

$$2x^2 + 7$$

Trinomial

$$\underline{1x^3 - 10x + 1}$$

$$d = 3$$

$$L C = 1$$

Degree	Name
0	constant
1	linear
2	quadratic
3	cubic

Polynomials are named based on their degree (exponents).

The diagram illustrates the components of a polynomial in standard form. A blue box labeled "leading coefficient" has a blue arrow pointing to the term $4x^3$. A red box labeled "greatest degree" has a red arrow pointing to the same term $4x^3$. Below this, the text "Standard form:" is followed by the polynomial $4x^3 - 5x^2 + 2x + 7$.

$$d = 3$$

Lc 4

Guided Practice

3A. $(5x^2 - 3x + 4) + (6x - 3x^2 - 3) = 2x^2 + 3x + 1$

3B. $(y^4 - 3y + 7) + (2y^3 + 2y - 2y^4 - 11) = -y^4 + 2y^3 - y - 4$

Distributive property

Example 4 Subtract Polynomials

Find each difference.

a. $(3 - 2x + 2x^2) - (4x - 5 + 3x^2)$

Danger!

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

$$-1x^2$$

$$-x^2 - 6x + 8$$

$$\text{b. } (7p + 4p^3 - 8) + (3p^2 + 2 - 9p)$$

7p + 4p³ - 8 + 3p² + 2 - 9p

$$4p^3 - 3p^2 + 16p - 10$$

Guided Practice

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

4A. $(4x^3 - 3x^2 + 6x - 4) - (-2x^3 + x^2 - 2)$

4B. $(8y - 10 + 5y^2) - (7 - y^3 + 12y)$

$$- 7 + y^3 - 12y$$

$$y^3 + 5y^2 + -4y + -17$$

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