Adding and subtracting polynomials

LEVEL 1: The Basics

Combine like terms in the following polynomials:

- $(2x + 3) + (5x + 4)$
- $(5a + 6) + (4a - 1)$
- $(x^2 + 7x) + (3x^2 + 2x)$
- $(2m^2 + 3m - 4) + (m^2 - m + 1)$
- $(4x - 1) + (6x + 2)$
- $(9x - 4x^2 + 3) + (2x^2 - 5x + 7)$
- $(7x^2 - 2x + 5) + (2x^2 + x - 3)$
- $(3t + 2t^2) - (t^2 - t)$
- $(8y^2 + y) - (2y^2 - 3y)$
- $(6x^2 - 4x + 1) - (2x^2 + x - 3)$

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LEVEL 2: Dive Deeper

Add or subtract, then write in standard form (descending powers):

- $(x^3 + 2x^2 + x) + (3x^2 - x + 4)$
- $(6b^2 + b + 1) - (b^2 - 2b + 3)$
- $4x^2 + 3x - 5) - (x^2 - 2x + 7)$
- $(t^3 + t^2 - t) - (2t^3 - t^2 + 2t)$
- $3x^3 - 4x + 1) + (x^3 + 2x\text{^}2 - 3)$
- $(4x^2 - 6x + 9) - (x^2 + 2x - 3)$
- $7y^2 + y - 6) - (2y^2 - y + 4)$
- $(5x - 4) - (2x + 3) + (x + 1)$
- $a^2 + 4a + 3) + (2a^2 - a - 1)$
- $(x^2 + x) - (x + 1) + (2x^2 - 3)$

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LEVEL 3: Mastering the Concept

- Find the sum: $(2x^4 - 3x^3 + 5x^2 - 7x + 4) + (x^4 + 4x^3 - 2x^2 + 6x - 9) + (-3x^4 + x^3 - 3x^2 + x + 5)$

- Subtract: $(5x^5 - 2x^4 + 3x^3 - 8x^2 + 4x - 1) - (2x^5 + 3x^4 - x^3 + 5x^2 - 6x + 7)$

- Simplify: $(3x^2 + 4xy - 2y^2) + (5x^2 - 3xy + 7y^2) - (2x^2 + xy - 4y^2)$

- Find: $(4x^3 - 2x^2 + 7x - 3) - [(2x^3 + 5x^2 - 3x + 1) - (x^3 - 3x^2 + 4x - 5)]$

- Evaluate: $(6x^4 + 2x^2 - 8) + (3x^3 - 5x^2 + 4x) - (2x^4 + x^3 - 7x^2 + 6x - 12)$

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Challenge Problems

Q1: What is the degree of the simplified polynomial:

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

Q2: Combine and simplify this expression representing area:

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

Q3: Create a polynomial with 3 terms. Then subtract $(2x^2 - x + 3)$ from it and simplify.

Q4: Write a subtraction expression that simplifies to $3x^2 - 2x + 7$

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