



Algebra 1

Topic: Adding and Subtracting Polynomials

Instructions

Solve the following problems by adding or subtracting the polynomials. Show all steps clearly and check your solutions.

Practice Problems

1. Add the polynomials:

- | | |
|---|---|
| (i) $(3x^2 + 5x + 2) + (4x^2 - 3x - 6)$ | (iv) $(x^3 + 2x^2 - x + 6) + (x^3 - 3x^2 + 4x - 2)$ |
| (ii) $(2a^2 - 3a + 5) + (3a^2 + 4a - 2)$ | (v) $(6y^2 - 5y + 1) + (2y^2 + 3y - 4)$ |
| (iii) $(5m^2 + 7m - 1) + (3m^2 - 2m + 4)$ | (vi) $(4x^2 + 6x + 8) + (2x^2 - 3x + 5)$ |

2. Subtract the polynomials:

- | | |
|--|--|
| (i) $(6x^2 - 3x + 4) - (2x^2 + x - 1)$ | (iv) $(2x^3 + 5x^2 - 3x + 8) - (x^3 - 2x^2 + x - 4)$ |
| (ii) $(5a^2 - 4a + 6) - (3a^2 + 2a - 5)$ | (v) $(7y^2 + 4y - 3) - (3y^2 + 2y + 5)$ |
| (iii) $(4m^2 + 3m + 7) - (2m^2 + m + 3)$ | (vi) $(3x^2 - 2x + 7) - (x^2 + 4x - 3)$ |

3. Combine like terms:

- | | |
|-----------------------------------|--------------------------------------|
| (i) $6x^2 + 3x - 5x^2 + 2x$ | (iv) $x^3 + 2x^2 - 3x^3 - 5x^2 + 7x$ |
| (ii) $4a^2 - 3a + 2a^2 + 7a - 5$ | (v) $6y^2 - 4y + 3y^2 + 2y - 5$ |
| (iii) $5m^2 + 3m - 7m^2 + 4m + 2$ | (vi) $7x^2 + 3x - 4x^2 + 5x + 2$ |

4. Simplify the following expressions:

- (i) $(2x^2 + 5x) + (3x^2 - 2x + 4)$ (iv) $(x^3 + 4x^2 - 2x) + (2x^3 - 3x^2 + 5x + 7)$
(ii) $(3a^2 + 2a - 7) + (a^2 - 4a + 5)$ (v) $(6y^2 - 2y + 4) - (3y^2 + 5y - 2)$
(iii) $(4m^2 - m + 6) + (2m^2 + 3m - 8)$ (vi) $(7x^2 + 2x + 3) - (4x^2 - 3x + 1)$

Multiple-Choice Questions

- What is the sum of $(5x^2 + 3x - 1)$ and $(4x^2 - 2x + 6)$?
A. $9x^2 + x + 5$ C. $9x^2 + x + 6$
B. $9x^2 + x + 7$ D. $9x^2 + 2x + 5$
- What is the result of subtracting $(3x^2 + 4x - 2)$ from $(5x^2 - 3x + 1)$?
A. $2x^2 - 7x + 3$ C. $8x^2 + x + 3$
B. $2x^2 + 7x - 1$ D. $8x^2 - x + 3$
- Simplify the expression $(2x^2 + 4x - 3) + (5x^2 - 2x + 4)$.
A. $7x^2 + 2x + 1$ C. $7x^2 + 6x + 4$
B. $7x^2 + 6x + 1$ D. $7x^2 + 2x + 4$
- What is the difference between $(4x^2 + 3x - 2)$ and $(2x^2 - x + 5)$?
A. $2x^2 + 4x - 7$ C. $2x^2 + 4x - 3$
B. $2x^2 + 4x + 3$ D. $2x^2 + 4x + 7$
- What is the sum of $(3a^2 + 5a - 4)$ and $(2a^2 - 3a + 6)$?
A. $5a^2 + 2a + 2$ C. $5a^2 + 8a + 3$
B. $5a^2 + 8a + 2$ D. $5a^2 + 2a + 3$

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