

Adding and Subtracting Polynomials

Guide Notes

Rules in Addition and Subtraction of Polynomials:

Rule 1: To add two or more monomial with the same literal coefficient, add only their numerical coefficient and affix the literal coefficient.

Rule 2: To add two or more polynomials, add similar or like terms together.

Rule 3: To subtract polynomials, change the sign of the subtrahend and proceed as in addition.

Rule 4: to remove grouping and symbols such as parenthesis (), Brackets [] and braces{} preceded by a

(i) minus sign, change the sign of each terms;

(ii) plus sign, no further change is done;

(iii) factor, use distributive law.

Sample Problem 1: find the sum of the following polynomials

1. $8 + x^2$ and $x^2 - 1$

2. $3a^2b + 4a - 9$ and $7 + 2a^2b - 4a$

3. $2a - 3b + 4c$ and $-4a - 4c$

4. $1 - 6a$ and $5 - 4a + 3a^2$

Sample Problem 2: Subtract the following polynomials

1. $2a - 3b + 4c$ and $-4a - 4c$

2. $3a^2b + 4a - 9$ and $7 + 2a^2b - 4a$

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Sample 3: Simplify the following polynomials, remove {}, [] and ().

7. $-(2x - y + 10) + (4x - 3y) - 2(3x - 4y + 6)$ 8. $4x - 2y - 5 - 2(8x - 7y) - (3x - 4y - 1)$

Sample 4: solve the following

9. Subtract $4x + 3y + 5$ from the sum of $-3x - y + 5$ and $x + 8y - 3$
10. Subtract the sum of $2x - 3y - 8z$ and $-3x + 5y - 11z$ from the sum of $-12x - 5y - 9z$ and $-8x + 2y + 12z$.