

LESSON
6-1**Adding and Subtracting Polynomials****Practice and Problem Solving: C**

Rewrite each polynomial in standard form. Then identify the leading coefficient, degree, and number of terms.

1. $5x^3 + 2x - 1 - 10x^2 + 9x^5 - 3x^4$

Add or subtract. Write your answer in standard form.

2. $(7x^3 + 2x - 1) + (8x^2 - 6 + 2x - x^3)$

3. $(12 - 11x - 5x^5) - (4x^4 + 8x - 4x^5 + 2x^3 - 1)$

4. $(-3x^4 + x^6 - 9x^5 + 2x^2 - 7) - (-2x^5 + x - 4x^2 - x^4 + 12)$

Solve.

5. What polynomial could you add to $3x^4 - 9x^3 + 5x^2 - x + 7$ to get a sum of $3 + 4x^4 + 3x - x^3 + 3x^2$?

6. What polynomial could you subtract from $5x^3 - 12x - x^2 + 9 - 12x^5 - 6x^4$ to give a difference of $19 + 8x^3 - 18x - 19x^5 - 2x^2 - 8x^4$?

7. The profit earned by the sales division of a company each year can be modeled by the polynomial $x^3 - x^2 + 2x - 100$, where x is the number of units sold. The profit earned by the manufacturing division can be modeled with the polynomial $x^2 - 4x - 300$.

- a. Write a polynomial to represent the difference of the profit from the sales division and the profit from the manufacturing division.
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- _____

- b. What is the total amount of profit that the company earns from both divisions?
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- _____

MODULE 6 Polynomials

LESSON 6-1

Practice and Problem Solving: A/B

- 2
- 7
- 11
- $-4x^3 + x^2 + 7x + 6$; -4 ; 3 ; 4
- $2x^5 + 7x^4 + x^2 - 12x - 3$; 2 ; 5 ; 5
- $11x^3 + x^2 + 3x + 4$
- $-3x^3 - 8x^2 + 6x - 4$
- $3x^4 + x^3 + 10x^2 + 7$
- $-x^7 + 21x^2 + 9x - 6$
- a. $-0.1t^2 + 6t + 67$
b. \$99,400

Practice and Problem Solving: C

- $9x^5 - 3x^4 + 5x^3 - 10x^2 + 2x - 1$; 9 ; 5 ; 6 terms
- $6x^3 + 8x^2 + 4x - 7$
- $-x^5 - 4x^4 - 2x^3 - 19x + 13$
- $x^6 - 7x^5 - 2x^4 + 6x^2 - x - 19$
- $x^4 + 8x^3 - 2x^2 + 4x - 4$
- $7x^5 + 2x^4 - 3x^3 + x^2 + 6x - 10$
- a. $x^3 - 2x^2 + 6x + 200$
b. $x^3 - 2x - 400$

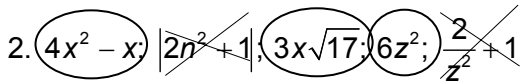
Practice and Problem Solving: Modified

- 2
- 0
- 4
- 1
- 3
- 5
- a. $x^3 + 2x^2 - 7x + 1$
b. 1
c. 3
d. 4

- a. $4x^2 - 3x + 5$
b. 4
c. 2
d. 3

- $9x + 15$
- $2x - 12$
- $x^2 + 2x + 2$
- $-x^2 + 3x - 5$
- $7c + 17$

Reading Strategies

- A monomial has only one term, whereas a polynomial has one or more terms.
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- a. $-x^5 + x + 1$; 5
b. $x^3 + x^2 - 2x + 6$; 3
- 4; 4; 2
- 5; 3; -6

Success for English Learners

- When a polynomial is in standard form, the leading coefficient is the coefficient on the first term. The degree is the greatest sum of exponents for all terms.
- It makes it easier to keep track of monomials.

LESSON 6-2

Practice and Problem Solving: A/B

- $12x^4 + 4x^2$
- $-9x^3 - 18x^2 - 36x$
- $-6x^5 - 42x^4 + 24x^3 - 18x^2$
- $-4x^6 + 10x^5 - 7x^4 + 2x^3$
- $-35m^3n^4 + 10m^4n^3 - 30m^3$
- $xy^2 + 2xy - 12x + 2y^2 + 4y - 24$
- $4p^3 - p^2 + 4p^2q - 2pq - 8pq^2 - q^2 - 8q^3$
- $2x^2y^2 + 6x^3 + xy^3 + 3x^2y - y^3 - 3xy$
- $27x^3 - 27x^2 + 9x - 1$
- $x^4 - 16x^3 + 96x^2 - 256x + 256$
- $3a^2 - 24ab + 48b^2$
- $5x^6 - 30x^4y + 60x^2y^2 - 40y^3$
- $8y^5 + 14y^4 + 7y^3 + y^2$