

LESSON

6-1

Adding and Subtracting Polynomials**Practice and Problem Solving: A/B**

Identify the degree of each monomial.

1. $6x^2$

2. $3p^3m^4$

3. $2x^8y^3$

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

4. $6 + 7x - 4x^3 + x^2$

5. $x^2 - 3 + 2x^5 + 7x^4 - 12x$

Add or subtract. Write your answer in standard form.

6. $(2x^2 - 2x + 6) + (11x^3 - x^2 - 2 + 5x)$

7. $(x^2 - 8) - (3x^3 - 6x - 4 + 9x^2)$

8. $(5x^4 + x^2) + (7 + 9x^2 - 2x^4 + x^3)$

9. $(12x^2 + x) - (6 - 9x^2 + x^7 - 8x)$

Solve.

10. An accountant finds that the gross income, in thousands of dollars, of a small business can be modeled by the polynomial $-0.3t^2 + 8t + 198$, where t is the number of years after 2010. The yearly expenses of the business, in thousands of dollars, can be modeled by the polynomial $-0.2t^2 + 2t + 131$.

- a. Find a polynomial that predicts the net profit of the business after t years.

- b. Assuming that the models continue to hold, how much net profit can the business expect to make in the year 2016?

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.
- $4x^2 - x$; $2n^2 + 1$; $3x\sqrt{17}$; $6z^2$; $\frac{2}{z^2} + 1$
- 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

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