Name _____   Date _____   Class _____

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?

    _____

LESSON
6-1

Adding and Subtracting Polynomials

Practice and Problem Solving

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

11. $5x^3 + 2x - 1 - 10x^2 + 9x^5 - 3x^4$

_____

Add or subtract. Write your answer in standard form.

12. $(7x^3 + 2x - 1) + (8x^2 - 6 + 2x - x^3)$

_____

13. $(12 - 11x - 5x^5) - (4x^4 + 8x - 4x^5 + 2x^3 - 1)$

_____

14. $(-3x^4 + x^6 - 9x^5 + 2x^2 - 7) - (-2x^5 + x - 4x^2 - x^4 + 12)$

_____

Solve.

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

_____

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

_____

17. 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.

   _____

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

   _____