

GUIDED PRACTICE

Vocabulary Check ✓

1. When you add or subtract polynomials, you add or subtract the coefficients of $\underline{\quad}$.

Concept Check ✓

2. **ERROR ANALYSIS** Describe the error in the subtraction shown below.

$$\begin{aligned} (x^2 - 3x + 4) - (x^2 + 7x - 2) &= x^2 - 3x + 4 - x^2 + 7x - 2 \\ &= 4x + 2 \end{aligned}$$

3. When you multiply a polynomial of degree 2 by a polynomial of degree 4, what is the degree of the product?

Skill Check ✓

Perform the indicated operation.

4. $(4x^2 + 3) + (3x^2 + 8)$

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

6. $(x^2 + 7x - 5) - (3x^2 + 1)$

7. $(x^2 + 1) - (3x^2 - 4x + 3)$

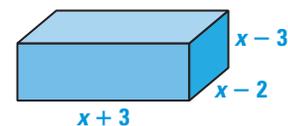
8. $(x + 2)(2x^2 + 3)$

9. $(x^2 + 3x + 10)(4x^2 - 2x - 7)$

10. $(x - 1)(2x + 1)(x + 5)$

11. $(-3x + 1)^3$

12. **GEOMETRY CONNECTION** Write a polynomial model in standard form for the volume of the rectangular prism shown at the right.



PRACTICE AND APPLICATIONS

STUDENT HELP

→ **Extra Practice**
to help you master
skills is on p. 948.

ADDING AND SUBTRACTING POLYNOMIALS Find the sum or difference.

13. $(8x^2 + 1) + (3x^2 - 2)$

14. $(3x^3 + 10x + 5) - (x^3 - 4x + 6)$

15. $(x^2 - 6x + 5) - (x^2 + x - 2)$

16. $(16 - 13x) + (10x - 11)$

17. $(7x^3 - 1) - (15x^3 + 4x^2 - x + 3)$

18. $8x + (14x + 3 - 41x^2 + x^3)$

19. $(4x^2 - 11x + 10) + (5x - 31)$

20. $(9x^3 - 4 + x^2 + 8x) - (7x^3 - 3x + 7)$

21. $(-3x^3 + x - 11) - (4x^3 + x^2 - x)$

22. $(6x^2 - 19x + 5) - (19x^2 - 4x + 9)$

23. $(10x^3 - 4x^2 + 3x) - (x^3 - x^2 + 1)$

24. $(50x - 3) + (8x^3 + 7x^2 + x + 4)$

25. $(10x - 3 + 7x^2) + (x^3 - 2x + 17)$

26. $(3x^3 - 5x^4 - 10x + 1) + (17x^4 - x^3)$

MULTIPLYING POLYNOMIALS Find the product of the polynomials.

27. $x(x^2 + 6x - 7)$

28. $10x^2(x - 5)$

29. $-4x(x^2 - 8x + 3)$

30. $5x(3x^2 - x + 3)$

31. $(x - 4)(x - 7)$

32. $(x + 9)(x - 2)$

33. $(x + 3)(x^2 - 4x + 9)$

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

35. $(2x + 5)(3x^3 - x^2 + x)$

36. $(6x + 2)(2x^2 - 6x + 1)$

37. $(x + 11)(x^2 - 5x + 9)$

38. $(4x^2 - 1)(x^2 - 6x + 9)$

39. $(x - 1)(x^3 + 2x^2 + 2)$

40. $(x + 1)(5x^3 - x^2 + x - 4)$

41. $(3x^2 - 2)(x^2 + 4x + 3)$

42. $(-x^3 - 2)(x^2 + 3x - 3)$

43. $(x^2 + x + 4)(2x^2 - x + 1)$

44. $(x^2 - x - 3)(x^2 + 4x + 2)$

STUDENT HELP

HOMEWORK HELP

Examples 1, 2: Exs. 13–26

Examples 3, 4: Exs. 27–44

Example 5: Exs. 45–52

Example 6: Exs. 53–61

Example 7: Exs. 64, 65, 69

Example 8: Exs. 66–68