

EXERCISES

For more exercises, see *Extra Skill and Word Problem Practice*.

Practice and Problem Solving

A Practice by Example

Example 1
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1. $4x$

2. $7c^3$

3. -16

4. $6y^2w^8$

5. $8ab^3$

6. 6

7. $-9x^4$

8. 11



Example 2
(page 495)

Name each expression based on its degree and number of terms.

9. $5x^2 - 2x + 3$

10. $\frac{3}{4}z + 5$

11. $7a^3 + 4a - 12$

12. $\frac{3}{x} + 5$

13. -15

14. $w^2 + 2$

Write each polynomial in standard form. Then name each polynomial based on its degree and number of terms.

15. $4x - 3x^2$

16. $4x + 9$

17. $c^2 - 2 + 4c$

18. $9z^2 - 11z^2 + 5z - 5$

19. $y - 7y^3 + 15y^8$

20. $-10 + 4q^4 - 8q + 3q^2$

Example 3
(page 496)

Simplify each sum.

21. $\frac{5m^2 + 9}{+ 3m^2 + 6}$

22. $\frac{3k - 8}{+ 7k + 12}$

23. $\frac{w^2 + w - 4}{+ 7w^2 - 4w + 8}$

24. $(8x^2 + 1) + (12x^2 + 6)$

25. $(g^4 + 4g) + (9g^4 + 7g)$

26. $(a^2 + a + 1) + (5a^2 - 8a + 20)$

27. $(7y^3 - 3y^2 + 4y) + (8y^4 + 3y^2)$

Example 4
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Simplify each difference.

28. $\frac{6c - 5}{- (4c + 9)}$

29. $\frac{2b + 6}{- (b + 5)}$

30. $\frac{7h^2 + 4h - 8}{- (3h^2 - 2h + 10)}$

31. $(17n^4 + 2n^3) - (10n^4 + n^3)$

32. $(24x^5 + 12x) - (9x^5 + 11x)$

33. $(6w^2 - 3w + 1) - (w^2 + w - 9)$

34. $(-5x^4 + x^2) - (x^3 + 8x^2 - x)$

B Apply Your Skills

Simplify. Write each answer in standard form.

35. $(7y^2 - 3y + 4y) + (8y^2 + 3y^2 + 4y)$

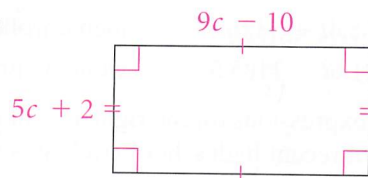
36. $(2x^3 - 5x^2 - 1) - (8x^3 + 3 - 8x^2)$

37. $(-7z^3 + 3z - 1) - (-6z^2 + z + 4)$

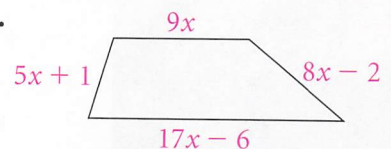
38. $(7a^3 - a + 3a^2) + (8a^2 - 3a - 4)$

Geometry Find an expression for the perimeter of each figure.

39.



40.



41. **Error Analysis** Kwan's work is shown below. What mistake did he make?

$$\begin{aligned} (5x^2 - 3x + 1) - (2x^2 - 4x - 2) &= 5x^2 - 3x + 1 - 2x^2 - 4x - 2 \\ &= 5x^2 - 2x^2 - 3x - 4x + 1 - 2 \\ &= 3x^2 - 7x - 1 \end{aligned}$$