9.3 EXERCISES

HOMEWORK KEY

- = **WORKED-OUT SOLUTIONS** On p. WS1 for Exs. 11 and 41
- = **TAKS PRACTICE AND REASONING** Exs. 17, 18, 42, 44, and 46
- = **MULTIPLE REPRESENTATIONS** Ex. 41

SKILL PRACTICE

1. **VOCABULARY** Give an example of two binomials whose product you can find using the sum and difference pattern.

2. **WRITING** *Explain* how to use the square of a binomial pattern.

EXAMPLE 1 on p. 569 for Exs. 3–10, 18

SQUARE OF A BINOMIAL **Find the product.**

3. $(x + 8)^2$
4. $(a + 6)^2$
5. $(2y + 5)^2$
6. $(t - 7)^2$
7. $(n - 11)^2$
8. $(6b - 1)^2$

ERROR ANALYSIS ***Describe*** **and correct the error in multiplying.**

9. $(s - 3)^2 = s^2 + 9$ ✗

10. $(2d - 10)^2 = 4d^2 - 20d + 100$ ✗

EXAMPLE 2 on p. 570 for Exs. 11–17

SUM AND DIFFERENCE PATTERN **Find the product.**

11. $(t + 4)(t - 4)$
12. $(m - 6)(m + 6)$
13. $(2x + 1)(2x - 1)$
14. $(3x - 1)(3x + 1)$
15. $(7 + w)(7 - w)$
16. $(3s - 8)(3s + 8)$

17. **TAKS REASONING** Find the product $(7x + 3)(7x - 3)$.

(A) $7x^2 - 9$ (B) $49x^2 - 9$ (C) $49x^2 - 21x - 9$ (D) $49x^2 - 42x - 9$

18. **TAKS REASONING** Find the product $(5n - 3)^2$.

(A) $5n^2 - 9$ (B) $25n^2 - 9$ (C) $25n^2 - 15n + 9$ (D) $25n^2 - 30n + 9$

EXAMPLE 3 on p. 570 for Exs. 19–22

MENTAL MATH ***Describe*** **how you can use mental math to find the product.**

19. $16 \cdot 24$
20. $28 \cdot 32$
21. 17^2
22. 44^2

SPECIAL PRODUCT PATTERNS **Find the product.**

23. $(r + 9s)^2$
24. $(6x + 5)^2$
25. $(3m + 11n)(3m - 11n)$
26. $(7a + 8b)(7a - 8b)$
27. $(3m - 7n)^2$
28. $(13 - 2x)^2$
29. $(3f - 9)(3f + 9)$
30. $(9 - 4t)(9 + 4t)$
31. $(3x + 8y)^2$
32. $(-x - 2y)^2$
33. $(2a - 5b)(2a + 5b)$
34. $(6x + y)(6x - y)$

MULTIPLYING FUNCTIONS **Perform the indicated operation using the functions $f(x) = 3x + 0.5$ and $g(x) = 3x - 0.5$.**

35. $f(x) \cdot g(x)$
36. $(f(x))^2$
37. $(g(x))^2$

38. **CHALLENGE** Write two binomials that have the product $x^2 - 121$. *Explain*.

39. **CHALLENGE** Write a pattern for the cube of a binomial $(a + b)^3$.