MULTIPLYING POLYNOMIALS **Use a vertical or a horizontal format to find the product.**

17. $(y + 6)(y - 5)$ **18.** $(5x - 8)(2x - 5)$ **19.** $(7w + 5)(11w - 3)$

20. $(b - 2)(b^2 - b + 1)$ **21.** $(s + 4)(s^2 + 6s - 5)$ **22.** $(-r + 7)(2r^2 - r - 9)$

23. $(5x + 2)(-3x^2 + 4x - 1)$ **24.** $(y^2 + 8y - 6)(4y - 3)$ **25.** $(6z^2 + z - 1)(9z - 5)$

26. **TAKS REASONING** What is the product of $2x - 9$ and $4x + 1$?

Ⓐ $8x^2 - 38x - 9$ Ⓑ $8x^2 - 34x - 9$

Ⓒ $8x^2 + 34x - 9$ Ⓓ $8x^2 + 38x - 9$

EXAMPLE 5 on p. 563 for Exs. 27–32

USING THE FOIL PATTERN **Use the FOIL pattern to find the product.**

27. $(2r - 1)(5r + 3)$ **28.** $(7a - 2)(3a - 4)$ **29.** $(4m + 9)(2m + 7)$

30. $(8t + 11)(6t - 1)$ **31.** $(4x - 5)(12x - 7)$ **32.** $(8z + 3)(5z + 4)$

SIMPLIFYING EXPRESSIONS **Simplify the expression.**

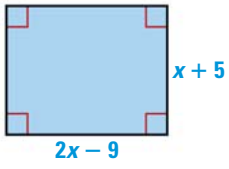
33. $p(2p - 3) + (p - 3)(p + 3)$ **34.** $x^2(7x + 5) - (2x + 6)(x - 1)$

35. $-3c^2(c + 11) - (4c - 5)(3c - 2)$ **36.** $2w^3(2w^3 - 7w - 1) + w(5w^2 + 2w)$

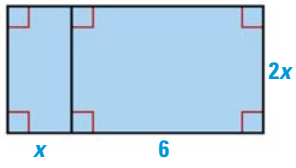
EXAMPLES 6 and 7 on p. 564 for Exs. 37–42

GEOMETRY **Write a polynomial that represents the area of the shaded region.**

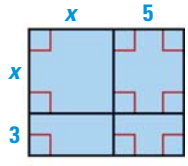
37.



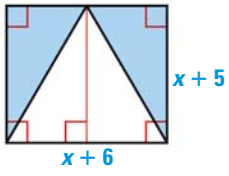
38.



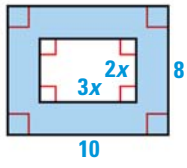
39.



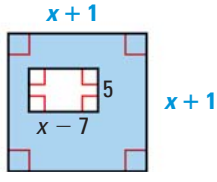
40.



41.



42.



43. **POLYNOMIAL FUNCTIONS** Find the product $f(x) \cdot g(x)$ for the functions $f(x) = x - 11$ and $g(x) = 2x + 12$.

44. **TAKS REASONING** Which polynomial represents $f(x) \cdot g(x)$ if $f(x) = -2x^2$ and $g(x) = x^3 - 5x^2 + 2x - 1$?

Ⓐ $-2x^5 - 10x^4 + 4x^3 - 2x^2$ Ⓑ $-2x^5 + 10x^4 - 4x^3 - 2x^2$

Ⓒ $-2x^5 + 10x^4 - 4x^3 + 2x^2$ Ⓓ $2x^5 - 10x^4 + 4x^3 - 2x^2$

45. **REASONING** Find the product $(x^2 - 7x)(2x^2 + 3x + 1)$. Show that the product is correct by using a graphing calculator. *Explain* your reasoning.

CHALLENGE **Find the product.**

46. $(x - y)(3x + 4y)$ **47.** $(x^2y + 9y)(2x + 3y)$ **48.** $(x^2 - 5xy + y^2)(4xy)$

= WORKED-OUT SOLUTIONS p. WS1

= TAKS PRACTICE AND REASONING