

EXERCISES

For more practice, see *Extra Practice*.

Practice and Problem Solving

A Practice by Example

Example 1
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Copy and fill in each blank.

1. $(5a + 2)(6a - 1) = \blacksquare a^2 + 7a - 2$ 2. $(3c - 7)(2c - 5) = 6c^2 - 29c + \blacksquare$
 3. $(z - 4)(2z + 1) = 2z^2 - \blacksquare z - 4$ 4. $(2x + 9)(x + 2) = 2x^2 + \blacksquare x + 18$

Simplify each product using the Distributive Property.

5. $(x + 2)(x + 5)$ 6. $(h + 3)(h + 4)$ 7. $(k + 7)(k - 6)$
 8. $(a - 8)(a - 9)$ 9. $(2x - 1)(x + 2)$ 10. $(2y + 5)(y - 3)$

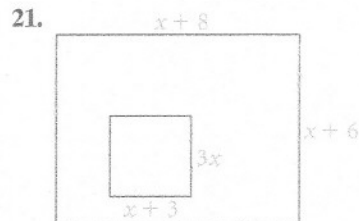
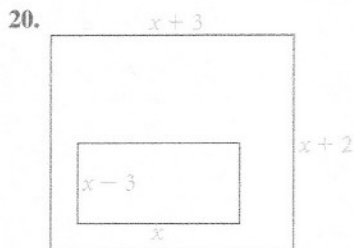
Example 2
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Simplify each product using FOIL.

11. $(r + 6)(r - 4)$ 12. $(y + 4)(5y - 8)$ 13. $(x + 6)(x - 7)$
 14. $(m - 6)(m - 9)$ 15. $(4b - 2)(b + 3)$ 16. $(8w + 2)(w + 5)$
 17. $(x - 7)(x + 9)$ 18. $(a + 11)(a + 5)$ 19. $(p - 1)(p + 10)$

Example 3
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Geometry Find the area of each shaded region. Simplify.



Example 4
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Simplify. Use the vertical method.

22. $(x + 9)(x^2 - 4x + 1)$ 23. $(a - 4)(a^2 - 2a + 1)$
 24. $(g - 3)(2g^2 + 3g + 3)$ 25. $(k + 8)(3k^2 - 5k + 7)$

Simplify. Use the horizontal method.

26. $(x^2 + 2x + 1)(9x - 3)$ 27. $(t^2 - 6t + 3)(2t - 5)$
 28. $(7p^2 + 5p - 1)(8p + 9)$ 29. $(12w^2 - w - 1)(4w - 2)$

B Apply Your Skills

Simplify each product. Write in standard form.

30. $(p - 7)(p + 8)$ 31. $(-7 + p)(8 + p)$ 32. $(p^2 - 7)(p + 8)$
 33. $(5c - 9)(5c + 1)$ 34. $(n^2 + 3)(n + 11)$ 35. $(3k^2 + 2)(k + 5k^2)$
 36. $(6h - 1)(4h^2 + h + 3)$ 37. $(9y^2 + 2)(y^2 - y - 1)$ 38. $(8q - 4)(6q^2 + q + 1)$

39. **Construction** You are planning a rectangular garden. Its length is twice its width. You want a walkway 2 ft wide around the garden.
 a. Write an expression for the area of the garden and walk.
 b. Write an expression for the area of the walk only.
 c. You have enough gravel to cover 76 ft^2 and want to use it all on the walk. How big should you make the garden?