

LESSON
9.8**Practice A**

For use with pages 606–613

Match the trinomial with its correct factorization.

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| 1. $2x(x + 5) - (x + 5)$ | 2. $2x(x + 5) + (x + 5)$ | 3. $2x(x - 5) - (x - 5)$ |
| A. $(2x + 1)(x + 5)$ | B. $(2x - 1)(x - 5)$ | C. $(2x - 1)(x + 5)$ |

Factor the expression.

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| 4. $x(x + 4) + (x + 4)$ | 5. $b(b + 3) - (b + 3)$ | 6. $2m(m + 1) + (m + 1)$ |
| 7. $5r(r + 2) - (r + 2)$ | 8. $w(w + 6) + 3(w + 6)$ | 9. $y(y + 4) - 6(y + 4)$ |
| 10. $n(n - 3) - 7(n - 3)$ | 11. $3z(z - 4) + 8(z - 4)$ | 12. $2p(p + 5) - 3(p + 5)$ |

Factor the polynomial by grouping.

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| 13. $x^2 + x + 3x + 3$ | 14. $x^2 - x + 2x - 2$ | 15. $x^2 + 8x - x - 8$ |
| 16. $x^3 - 5x^2 + 2x - 10$ | 17. $x^3 - 4x^2 - 6x + 24$ | 18. $x^3 + 3x^2 + 5x + 15$ |
| 19. $x^3 - x^2 + 7x - 7$ | 20. $x^3 + 3x^2 - 3x - 9$ | 21. $x^3 + 3x^2 - x - 3$ |

Determine whether the polynomial has been completely factored.

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| 22. $x^4 + x^3$ | 23. $x^2 + 1$ | 24. $2x^2 + 4$ |
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Factor the polynomial completely.

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| 25. $x^5 - x^3$ | 26. $4a^4 - 25a^2$ | 27. $5y^6 - 125y^4$ |
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Solve the equation.

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| 28. $x^3 + x^2 - 25x - 25 = 0$ | 29. $x^3 + x^2 - 16x - 16 = 0$ | 30. $x^3 - x^2 - 4x + 4 = 0$ |
| 31. $x^3 - x^2 - 9x + 9 = 0$ | 32. $z^3 - 4z = 0$ | 33. $c^4 - 64c^2 = 0$ |

34. **Metal Plate** You have a metal plate that you have drilled a hole into. The entire area enclosed by the metal plate is given by $5x^2 + 12x + 10$ and the area of the hole is given by $x^2 + 2$. Write an expression for the area in factored form of the plate that is left after the hole is drilled.



35. **Storage Container** A plastic storage container in the shape of a cylinder has a height of 8 inches and a volume of 72π cubic inches.
- Write an equation for the volume of the storage container.
 - What is the radius of the storage container?
36. **Tennis Ball** For a science experiment, you toss a tennis ball from a height of 32 feet with an initial upward velocity of 16 feet per second. How long will it take the tennis ball to reach the ground?