

LESSON
8.8**Practice A**

For use with the lesson "Factor Polynomials Completely"

Match the trinomial with its correct factorization.

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.

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.

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.

22. $x^4 + x^3$

23. $x^2 + 1$

24. $2x^2 + 4$

Factor the polynomial completely.

25. $x^5 - x^3$

26. $4a^4 - 25a^2$

27. $5y^6 - 125y^4$

Solve the equation.

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?