

LESSON
8.7**Practice B**

For use with the lesson "Factor Special Products"

Factor the polynomial.

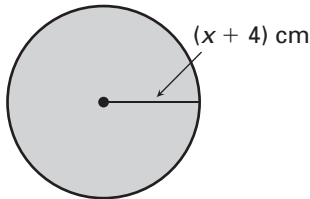
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|------------------------|------------------------|--------------------------|
| 1. $x^2 - 36$ | 2. $25p^2 - 144$ | 3. $4b^2 - 100$ |
| 4. $36m^2 - 81$ | 5. $-2x^2 + 32$ | 6. $-4r^2 + 100s^2$ |
| 7. $y^2 + 24y + 144$ | 8. $9c^2 + 24c + 16$ | 9. $25w^2 - 20w + 4$ |
| 10. $16n^2 - 56n + 49$ | 11. $-18a^2 - 12a - 2$ | 12. $20z^2 - 140z + 245$ |

Solve the equation.

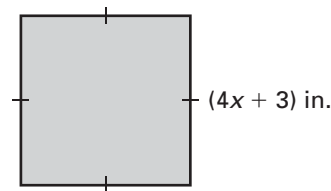
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|----------------------------|---|----------------------------|
| 13. $x^2 + 14x + 49 = 0$ | 14. $8w^2 = 50$ | 15. $64p^2 - 16p + 1 = 0$ |
| 16. $8a^2 - 72 = 0$ | 17. $3m^2 + 30m + 75 = 0$ | 18. $-4y^2 + 32y - 64 = 0$ |
| 19. $-5x^2 + 125 = 0$ | 20. $-7r^2 + 140r - 700 = 0$ | 21. $24w^2 - 24w + 6 = 0$ |
| 22. $18n^2 + 60n + 50 = 0$ | 23. $\frac{25}{2}x^2 + 15x + \frac{9}{2} = 0$ | 24. $4x^2 = \frac{9}{16}$ |

Find the value of x in the geometric shape.

25. Area = 144π cm²



26. Area = 225 in.²



27. **Measuring Tape** A measuring tape drops from a roof that is 16 feet above the ground. After how many seconds does the measuring tape land on the ground?

28. **Playground** A curved ladder that children can climb on can be modeled by the equation

$$y = -\frac{1}{20}x^2 + x$$

where x and y are measured in feet.

- Make a table of values that shows the height of the ladder for $x = 0, 5, 10, 15,$ and 20 feet from the left end.
- For what additional values of x does the equation make sense? *Explain.*
- Plot the ordered pairs in the table from part (a) as points in the coordinate plane. Connect the points with a smooth curve.
- At approximately what distance from the left end does the ladder reach a height of 5 feet? Check your answer algebraically.

