

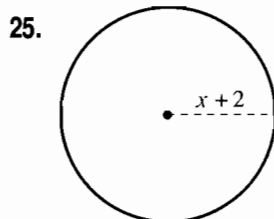
In 1–12, solve the equation by factoring.

- |                            |                          |                         |
|----------------------------|--------------------------|-------------------------|
| 1. $x^2 + x - 6 = 0$       | 2. $x^2 - 8x + 15 = 0$   | 3. $3x^2 + 9x - 12 = 0$ |
| 4. $6x^2 - 10x - 4 = 0$    | 5. $6x^2 - 27x + 27 = 0$ | 6. $3x^2 + 5x + 2 = 0$  |
| 7. $8x^2 + 10x + 3 = 0$    | 8. $4x^2 - 8x - 5 = 0$   | 9. $12x^2 - 5x - 3 = 0$ |
| 10. $15x^2 + 16x - 15 = 0$ | 11. $8x^2 - 22x + 5 = 0$ | 12. $6x^2 + 5x + 1 = 0$ |

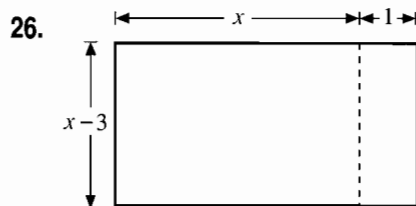
In 13–24, solve the equation by finding square roots, by the quadratic formula, or by factoring.

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|-------------------------|----------------------------|-------------------------|
| 13. $4x^2 - 9 = 0$      | 14. $x^2 + 6x = 0$         | 15. $x^2 - 4x + 1 = 0$  |
| 16. $x^2 + 21 = 10x$    | 17. $x^2 + 7x = 1$         | 18. $2x^2 - 3x - 4 = 0$ |
| 19. $2x^2 = 16x$        | 20. $2x^2 + 12x + 10 = -8$ | 21. $2x^2 - x = 6$      |
| 22. $12x^2 + x - 1 = 0$ | 23. $2x^2 + 7x = 4$        | 24. $2x^2 + 3x + 5 = 8$ |

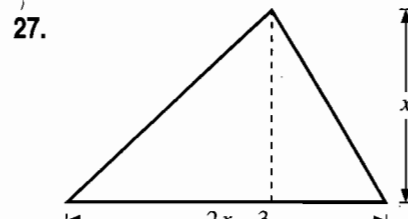
In 25–27, find the dimensions of the geometric shape.



Area =  $144\pi \text{ cm}^2$



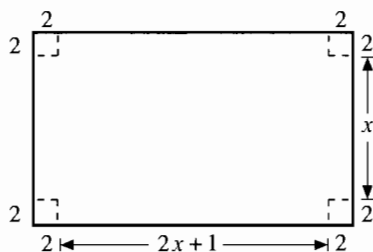
Area =  $60 \text{ in}^2$



Area =  $27 \text{ in}^2$

28. **Throwing a Ball** A ball is thrown into the air with an initial velocity of 13 feet per second. The ball was 3 feet off the ground when it was released. The equation  $h = -16t^2 + 13t + 3$  models the height of the ball. How long does it take for the ball to hit the ground ( $h = 0$ )?

29. **Making a Box** You construct a box with a volume of 110 cubic inches from a piece of metal by cutting 2-inch squares from each corner and folding up the sides. Find the dimensions of the box. Find the dimensions of the original piece of metal.



30. **Fencing** You are buying a fence to enclose a garden that has an area of 170 square feet. What are the dimensions of the area to be enclosed? How much fencing do you need?

