

LESSON
9.5

Practice A

For use with the lesson "Solve Quadratic Equations by Completing the Square"

Match the expression with the value of c that makes the expression a perfect square trinomial.

1. $x^2 + 8x + c$

2. $x^2 + 16x + c$

3. $x^2 + 4x + c$

A. 4

B. 16

C. 64

Write the expression as a square of a binomial.

4. $x^2 + 2x + 1$

5. $x^2 - 14x + 49$

6. $x^2 + 18x + 81$

7. $x^2 - 4x + 4$

8. $x^2 + 22x + 121$

9. $x^2 - 24x + 144$

Find the value of c that makes the expression a perfect square trinomial. Then write the expression as a square of a binomial.

10. $x^2 - 10x + c$

11. $x^2 - 8x + c$

12. $x^2 - 6x + c$

13. $x^2 + 22x + c$

14. $x^2 - 12x + c$

15. $x^2 + 20x + c$

16. $x^2 - 30x + c$

17. $x^2 + 26x + c$

18. $x^2 + 40x + c$

19. $x^2 + 3x + c$

20. $x^2 + 11x + c$

21. $x^2 - 7x + c$

Solve the equation by completing the square. Round your solutions to the nearest hundredth, if necessary.

22. $x^2 + 6x = 2$

23. $x^2 + 10x = 1$

24. $x^2 - 4x = 3$

25. Flight of an Arrow An arrow is shot into the air with an upward velocity of 64 feet per second from a hill 32 feet high. The height h of the arrow (in feet) can be found by using the model $h = -16t^2 + 64t + 32$ where t is the time (in seconds).

- Write an equation that you can use to find when the arrow will be 64 feet above the ground.
- When will the arrow be 64 feet above the ground? Round your answer(s) to the nearest hundredth.
- Write and solve an equation that you can use to find when the arrow will be 32 feet above the ground.

26. Tile Floor You are tiling a floor so that it has marble in the center and ceramic tile around the border as shown. The ceramic tile border has a uniform width x (in feet). You have enough money in your budget to purchase marble to cover 28 square feet.

- Solve the equation $28 = (12 - 2x)(15 - 2x)$ to find the width of the border.
- How many square feet of ceramic tile will you need for the project? *Explain* how you found your answer.

