

9-5**Practice B***Form K***Completing the Square**

Find the value of c such that each expression is a perfect-square trinomial.

1. $z^2 + 2z + c$

2. $h^2 + 14h + c$

3. $p^2 - 11p + c$

4. $n^2 + 26n + c$

Solve each equation by completing the square. Give your answer in simplest radical form.

5. $t^2 - 17t = -52$

6. $m^2 + 6m = 7$

7. $f^2 + 3f = 88$

8. $z^2 + 9z = 36$

9. $a^2 + 13a = 12$

10. $g^2 + 5g + 4 = 0$

11. $d^2 + 7d + 9 = 0$

12. $b^2 - 5b - 10 = 0$

Solve each equation by completing the square. If necessary, round to the nearest hundredth.

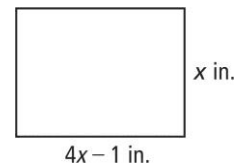
13. $6n^2 + 9n = 12$

14. $2t^2 - 4t = 1$

15. $3v^2 + 9v + 5 = 0$

16. $4c^2 - 8c = 1$

17. The rectangle shown at the right has an area of 663 in^2 . What is the value of x ?



18. What are all of the values of b that will make $x^2 + bx + 64$ a perfect square?

19. What are all of the values of b that will make $x^2 + bx + 144$ a perfect square?

20. The product of two consecutive positive even integers is 168. What are the integers?

21. **Writing** Discuss how you could use graphing, factoring, and completing the square for solving the quadratic equation $x^2 + 3x - 2 = 0$.

22. The height of a triangle is $6x \text{ cm}$ and the base is $(3x + 10) \text{ cm}$. The area of the triangle is 816 cm^2 . What are the dimensions of the base and height of the triangle?

23. **Writing** Does completing the square always give a solution for a quadratic equation that cannot be factored? Explain.

24. **Reasoning** How do the solutions of the equation $x^2 - 6x + 9 = 16$ compare to the solutions of $x^2 - 6x + 9 = 25$? Explain how you can determine the relationship without solving both equations.