

**4.4 Practice B**

In Exercises 1–3, find the value of  $c$  that completes the square.

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

2.  $x^2 - x + c$

3.  $x^2 + 7x + c$

In Exercises 4–6, complete the square for the expression. Then factor the trinomial.

4.  $x^2 - 14x$

5.  $x^2 + 30x$

6.  $x^2 - 9x$

In Exercises 7–9, solve the equation by completing the square. Round your solutions to the nearest hundredth, if necessary.

7.  $x^2 + 10x = 16$

8.  $x^2 - 3x = 7$

9.  $x^2 + 15x = 12$

10. A wading pool is 1 foot deep and has a volume of 108 cubic feet. The width is 12 feet less than the length.

a. Write an equation that represents the volume of the wading pool.

b. Find the dimensions of the wading pool by completing the square.

In Exercises 11–16, solve the equation by completing the square. Round your solutions to the nearest hundredth, if necessary.

11.  $x^2 - 10x + 17 = 0$

12.  $x^2 + 22x + 25 = 0$

13.  $3x^2 - 15x + 27 = 0$

14.  $2x^2 + 40x + 32 = 0$

15.  $-3x^2 - 12x - 10 = -37$

16.  $5x^2 - 15x - 10 = 20$

17. Find all values of  $b$  for which  $x^2 + bx + 49$  is a perfect square.

In Exercises 18–21, determine whether the quadratic function has a maximum or minimum value. Then find the value.

18.  $y = x^2 - 6x + 4$

19.  $y = 2x^2 + 16x - 7$

20.  $y = -3x^2 - 15x - 21$

21.  $y = 5x^2 - 20x + 25$

22. The product of two consecutive odd integers that are positive is 323.

a. Write an equation to find the integers.

b. Find the two integers.