

**4.4****Practice A**

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

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

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

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

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

4.  $x^2 - 4x$

5.  $x^2 - 20x$

6.  $x^2 + 26x$

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

7.  $x^2 + 8x = 6$

8.  $x^2 - 12x = -11$

9.  $x^2 + 18x = 7$

10. A rectangular kitchen has an area of 160 square feet. The length is 12 feet more than the width.

- Write an equation that represents the area of the kitchen.
- Find the dimensions of the kitchen 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.  $x^2 - 6x + 18 = 0$

12.  $x^2 + 2x - 15 = 0$

13.  $2x^2 - 16x + 20 = 0$

14.  $3x^2 + 24x + 21 = 0$

15.  $-4x^2 - 16x + 19 = -17$

16.  $-2x^2 + 12x + 16 = 22$

17. You are completing the square to solve  $5x^2 + 30x = 45$ . What is the first step?

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.  $y = x^2 + 8x + 10$

20.  $y = -x^2 - 14x - 20$

21.  $y = 2x^2 + 12x - 22$

22. The product of two consecutive even integers that are negative is 224.

- Write an equation to find the integers.
- Find the two integers.