

**4.5****Practice A**

In Exercises 1–3, write the equation in standard form. Then identify the values of  $a$ ,  $b$ , and  $c$  that you would use to solve the equation using the Quadratic Formula.

1.  $x^2 = -5x$

2.  $x^2 + 3x = -10$

3.  $-5x^2 + 2 = 7x$

In Exercises 4–11, solve the equation using the Quadratic Formula. Round your solutions to the nearest tenth, if necessary.

4.  $x^2 + 6x + 9 = 0$

5.  $x^2 + 5x + 14 = 0$

6.  $x^2 + 9x - 10 = 0$

7.  $3x^2 - 2x - 1 = 0$

8.  $3x^2 - 5x + 4 = 0$

9.  $4x^2 + 4x + 1 = 0$

10.  $6x^2 + 5x = 6$

11.  $-5x^2 + 9x = -3$

12. Your friend competes in a high-jump competition at a track meet. The function  $h = -16t^2 + 18t$  models the height  $h$  (in feet) of your friend after  $t$  seconds.

- After how many seconds is your friend at a height of 4 feet?
- After how many seconds does your friend land on the ground?

In Exercises 13–15, determine the number of real solutions of the equation.

13.  $x^2 + 2x + 1 = 0$

14.  $x^2 - 4x - 7 = 0$

15.  $3x^2 - 2x = -6$

In Exercises 16–18, find the number of  $x$ -intercepts of the graph of the function.

16.  $y = -x^2 + 3x + 5$

17.  $y = 3x^2 - 7x + 8$

18.  $y = 5x^2 - 10x + 1$

In Exercise 19–24, solve the equation using any method. Explain your choice of method.

19.  $3x^2 = 12$

20.  $3x^2 - 7x + 8 = 0$

21.  $x^2 + 8x = 3$

22.  $x^2 = 8 - x$

23.  $x^2 - 14x + 49 = 0$

24.  $4x^2 = 20x$

25. Consider the equation  $3x^2 + 5x + 6 = 0$ .

- Use the discriminant to determine the number of solutions.
- Change the sign of  $b$  in the equation. Write the new equation.
- Use the discriminant to determine the number of solutions of the new equation. Did your answer change? Explain.