Name _____ Date _____

LESSON 10.6

Practice A

For use with pages 671–676

Identify the values of *a*, *b*, and *c* in the quadratic equation.

1. $5x^2 + 7x + 1 = 0$

2. $2x^2 - 6x + 11 = 0$

3. $-x^2 + 17x - 23 = 0$

4. $10x^2 - 8x - 13 = 0$

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

6. $5x^2 - 18x - 3 = 0$

Match the quadratic equation with the formula that gives its solution(s).

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

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

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

A. $x = \dfrac{-4 \pm \sqrt{4^2 - 4(-1)(2)}}{2(-1)}$

B. $x = \dfrac{-1 \pm \sqrt{1^2 - 4(2)(-4)}}{2(2)}$

C. $x = \dfrac{-(-1) \pm \sqrt{(-1)^2 - 4(4)(2)}}{2(4)}$

Use the quadratic formula to solve the equation. Round your solutions to the nearest hundredth, if necessary.

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

11. $x^2 - 4x - 9 = 0$

12. $5x^2 + 2x - 3 = 0$

13. $x^2 + 8x + 2 = 0$

14. $x^2 + 10x + 1 = 0$

15. $2x^2 - 3x + 5 = 0$

16. $3x^2 + 5x - 2 = 0$

17. $6x^2 - 2x + 5 = 0$

18. $2x^2 - 8x + 3 = 0$

19. $-x^2 + 4x - 16 = 0$

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

21. $5x^2 - 2x + 1 = 0$

22. **Nuts** For the period 1990–2002, the amount of shelled nuts y (in millions of pounds) imported into the United States can be modeled by the function $y = 1.55x^2 - 5.1x + 197$ where x is the number of years since 1990.

a. Write and solve an equation that you can use to approximate the year in which 300 million pounds of nuts were imported.

b. Write and solve an equation that you can use to approximate the year in which 237 million pounds of nuts were imported.

23. **Soybeans** For the period 1995–2003, the number of acres y (in millions) of soybeans harvested in the United States can be modeled by the function $y = -0.31x^2 + 3.8x + 61.6$ where x is the number of years since 1995.

a. Write and solve an equation that you can use to approximate the year(s) in which 73 million acres of soybeans were harvested.

b. Graph the function on a graphing calculator. Use the *trace* feature to find the year in which 73 million acres of soybeans were harvested. Use the graph to check your answer from part (a).