Name _____ Date _____

4.5　Practice B

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. $x^2 + 2x = 9$
2. $6x - 1 = 7x^2$
3. $-10x + 2 = -4x^2 + 9$

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

4. $x^2 - 8x + 16 = 0$
5. $x^2 + 10x - 11 = 0$

6. $2x^2 - 7x + 3 = 0$
7. $5x^2 + 3x - 1 = 0$

8. $5x^2 - 3x + 4 = 0$
9. $x^2 = -2x - 1$

10. $8x^2 + 9x = 3$
11. $-5x^2 + 2x = 4$

12. You launch a water balloon. The function $h = -0.08t^2 + 1.6t + 2$ models the height h (in feet) of the water balloon after t seconds.

   a. After how many seconds is the water balloon at a height of 9 feet?

   b. After how many seconds does the water balloon hit the ground?

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

13. $4x^2 = -3x - 8$
14. $-2x^2 - 4x + 7 = 0$
15. $x^2 + 6x + 9 = 0$

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

16. $y = 3x^2 - 6x + 3$
17. $y = 4x^2 + 3x + 9$
18. $y = -2x^2 - 3x + 1$

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

19. $x^2 - 20x = 13$
20. $-7x^2 = 21x$

21. $-9x^2 = 72$
22. $7x^2 + 7 = 8 - 9x$

23. $5x^2 = 4x + 10$
24. $x^2 - 12x + 36 = 0$

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

   a. Use the discriminant to determine the number of solutions.

   b. Change the sign of c in the equation. Write the new equation.

   c. Use the discriminant to determine the number of solutions of the new equation. Did your answer change? Explain.