Name ____ Date __________

4.7 Practice B

In Exercises 1–8, solve the equation using any method. Explain your choice of method.

1. $x^2 + 16 = -28$

2. $\frac{1}{3}x^2 = -15$

3. $k^2 - 16k + 64 = -8$

4. $t^2 - 30t + 225 = -24$

5. $x^2 + 5x + 20 = 0$

6. $4x^2 - 3x - 5 = 0$

7. $3x^2 - 6x = -25$

8. $-3t^2 = -8t + 6$

9. Write a quadratic equation in the form $x^2 + bx + c = 0$ that has the solutions $x = -5 \pm i$.

In Exercises 10–15, find the zeros of the function.

10. $f(x) = -x^2 - 48$

11. $g(x) = -\frac{1}{4}x^2 - 13$

12. $f(x) = 7x^2 + 3x + 6$

13. $f(x) = x^2 + 100$

14. $p(x) = x^2 + x + 2$

15. $w(x) = -3x^2 + 3x - 4$

In Exercises 16 and 17, find a possible pair of integer values for *a* and *c* so that the quadratic equation has the given solution(s). Then write the equation.

16. $ax^2 - 3x + c = 0$; two real solutions

17. $ax^2 + 10x + c = 0$; two imaginary solutions

18. Your friend says that the situation representing the height y (in feet) of a basketball t seconds after it is thrown can be modeled by the function $y = -16t^2 + 12t + 3$. Is it possible for the basketball to reach the height of 6 feet? Explain.

In Exercises 19 and 20, use the Quadratic Formula to write a quadratic equation that has the given solutions.

19. $x = \dfrac{10 \pm \sqrt{-68}}{14}$

20. $x = \dfrac{-3 \pm 5i}{8}$

21. Suppose a quadratic equation has the form $x^2 + x + c = 0$. Show that the constant c must be greater than $\frac{1}{4}$ in order for the equation to have two imaginary solutions.