Name_____ Date _____

4.7 Practice A

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

1. $x^2 + 36 = 0$

2. $x^2 + 6 = -14$

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

4. $x^2 + 12x + 36 = -49$

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

6. $4x^2 + 22 = 18x$

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

8. $6x^2 = 4x - 9$

9. Write a quadratic equation in the form $x^2 + bx + c = 0$ that has the solutions $x = 3 \pm i$.

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

10. $f(x) = 5x^2 + 15$

11. $g(x) = 3x^2 + 21$

12. $f(x) = x^2 - x + 4$

13. $f(x) = x^2 + 10x + 25$

14. $k(x) = 3x^2 - 3x + 18$

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

16. What are the complex solutions of the equation $2x^2 - 32x + 178 = 0$?

A. $8 + 20i, 8 - 20i$

B. $8 + 5i, 8 - 5i$

C. $32 + 5i, 32 - 5i$

D. $32 + 20i, 32 - 20i$

In Exercises 17 and 18, 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.

17. $ax^2 + 8x + c = 0$; one real solution

18. $ax^2 - 5x + c = 0$; two imaginary solutions

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

19. $x = \dfrac{9 \pm \sqrt{-79}}{8}$

20. $x = \dfrac{-11 \pm \sqrt{97}}{-6}$

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