Name _____ Date _____

3.5 Practice B

In Exercises 1 and 2, find the *x*-intercepts and axis of symmetry of the graph of the function.

1. $f(x) = -\frac{1}{3}x(x + 5)$

2. $g(x) = 9(x + 6)(x - 4)$

In Exercises 3–6, graph the quadratic function. Label the vertex, axis of symmetry, and *x*-intercepts. Describe the domain and range of the function.

3. $f(x) = 4(x + 3)(x + 2)$

4. $y = -3(x - 4)(x + 2)$

5. $p(x) = x^2 - 7x + 12$

6. $y = 2x^2 + 20x + 42$

In Exercises 7–10, find the zero(s) of the function.

7. $f(x) = \frac{2}{3}(x + 8)(x - 5)$

8. $g(x) = 3x^2 + 13x + 4$

9. $y = (x^2 - 25)(x + 7)$

10. $y = x^3 - 81x$

In Exercises 11–14, use zeros to graph the function.

11. $f(x) = -2(x - 5)(x - 3)$

12. $g(x) = x^2 + 2x - 24$

13. $y = -4x^2 - 16x + 20$

14. $f(x) = 3x^2 - 12$

In Exercises 15–19, write a quadratic function in standard form whose graph satisfies the given conditions.

15. vertex: $(6, -2)$

16. x-intercepts: 5 and -8

17. passes through $(-4, 0)$, $(2, 0)$, and $(0, -4)$

18. y decreases as x increases when $x < 1$; y increases as x increases when $x > 1$

19. range: $y \leq 6$

20. The cross section of a satellite dish can be modeled by the function $y = \frac{1}{6}(x^2 - 9)$, where x and y are measured in feet. The x-axis represents the top of the opening of the dish.

a. How wide is the satellite dish?

b. How deep is the satellite dish?