Name _____ Date _____

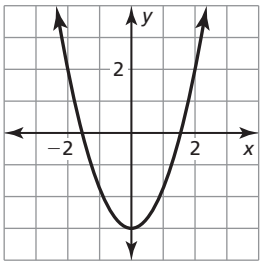
3.4 Practice A

In Exercises 1–3, determine whether the function is *even*, *odd*, or *neither*.

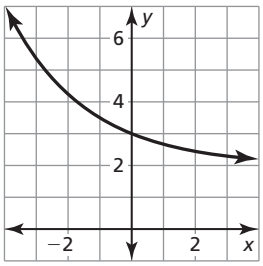
1. $g(x) = 4^x - 1$ **2.** $f(x) = 2x - 5$ **3.** $h(x) = 2x^2 + 5$

In Exercises 4 and 5, determine whether the function represented by the graph is *even*, *odd*, or *neither*.

4.



5.



In Exercises 6–8, find the vertex and the axis of symmetry of the graph of the function.

6. $f(x) = 4(x + 2)^2$ **7.** $f(x) = \frac{1}{3}(x - 3)^2$ **8.** $y = -5(x + 7)^2$

In Exercises 9–11, graph the function. Compare the graph to the graph of $f(x) = x^2$.

9. $g(x) = 2(x + 1)^2$ **10.** $g(x) = 3(x - 2)^2$ **11.** $g(x) = \frac{1}{4}(x + 6)^2$

In Exercises 12–14, find the vertex and the axis of symmetry of the graph of the function.

12. $y = -5(x + 3)^2 - 2$ **13.** $f(x) = 2(x - 2)^2 + 5$ **14.** $y = -3(x + 5)^2 - 4$

In Exercises 15 and 16, graph the function. Compare the graph to the graph of $f(x) = x^2$.

15. $g(x) = (x - 3)^2 + 2$ **16.** $g(x) = -(x + 2)^2 - 4$

In Exercises 17 and 18, rewrite the quadratic function in vertex form.

17. $y = 2x^2 + 4x - 1$ **18.** $f(x) = 3x^2 - 12x + 4$

19. The graph of $y = x^2$ is translated 4 units left and 3 units down. Write an equation for the function in vertex form and in standard form. Describe advantages of writing the function in each form.