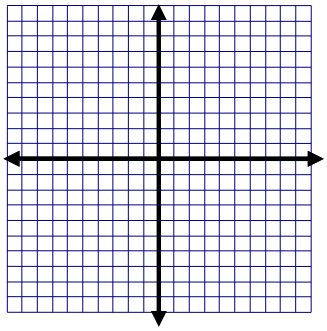
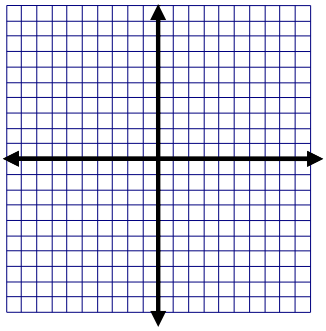
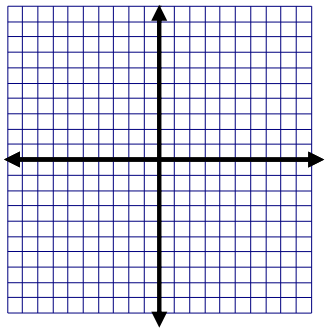
Chapter 8 Review Homework Alg 1H

Graph each function. Compare the graph to the graph of $f(x) = x^2$. *(Lesson 8.4)*

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

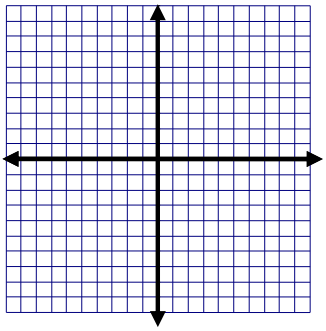
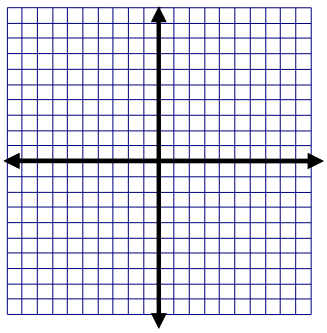
Rewrite the quadratic function in vertex form.

4. $y = 2x^2 + 4x - 1$

5. 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.

Graph the quadratic function. Label the vertex, axis of symmetry, and *x*-intercepts. Describe the domain and range of the function. *(Lesson 8.5)*

6. $y = -(x - 5)(x + 1)$ **7.** $y = x^2 + 8x + 7$

Write a quadratic function in standard form whose graph satisfies the given conditions.

8. *x*-intercepts: 2 and 7

9. axis of symmetry: $x = -3$

10. passes through: $(-4, 0)$ and $(4, 0)$

11. The cross-section of a pond 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 surface of the water. How wide and deep is the pond?

Tell whether the points represent a *linear*, an *exponential*, or a *quadratic* function. Check by plotting the points, (by hand or with a graphing calculator). *(Lesson 8.6)*

12. $(-3, 4), (-2, 1), (-1, 0), (0, 1), (1, 4)$

13. $(-4, 0), (-2, 1), (0, 2), (2, 3), (4, 4)$

14. $(-3, -6), (-2, -1), (-1, 2), (0, 3), (1, 2)$

Graph each function. Describe the domain and range. *(Lesson 8.3)*

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

16. $y = -6x^2 - 12x - 5$