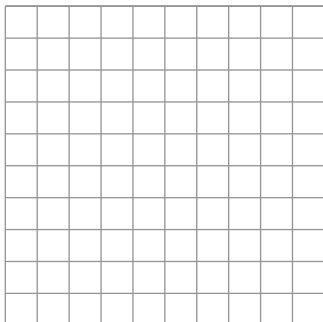


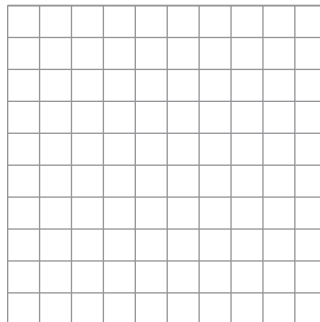
**8.2** Notetaking with Vocabulary (continued)**Extra Practice**

In Exercises 1–4, graph the function. Compare the graph to the graph of  $f(x) = x^2$ .

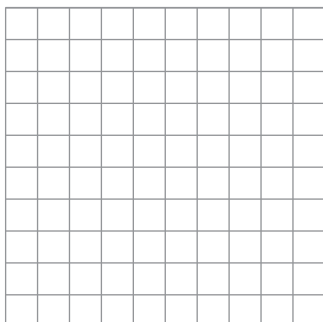
1.  $g(x) = x^2 + 5$



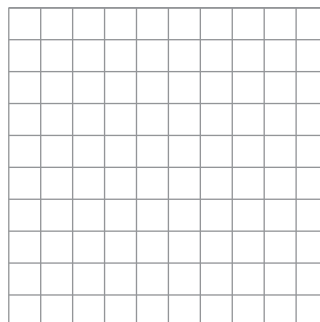
2.  $m(x) = x^2 - 3$



3.  $n(x) = -3x^2 - 2$



4.  $q(x) = \frac{1}{2}x^2 - 4$



**8.2** Notetaking with Vocabulary (continued)

In Exercises 5–8, find the zeros of the function.

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

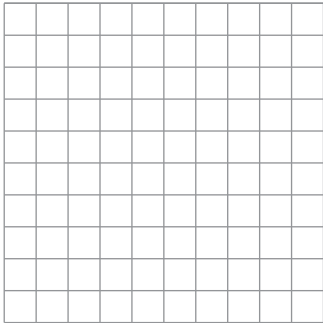
6.  $y = -4x^2 + 16$

7.  $n(x) = -x^2 + 64$

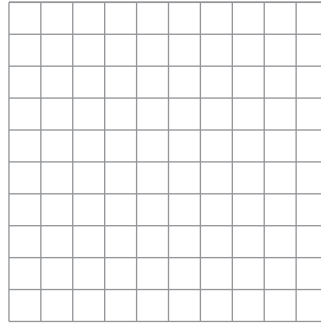
8.  $p(x) = -9x^2 + 1$

In Exercises 9 and 10, sketch a parabola with the given characteristics.

9. The parabola opens down, and the vertex is
- $(0, 5)$
- .



10. The lowest point on the parabola is
- $(0, 4)$
- .



11. The function
- $f(t) = -16t^2 + s_0$
- represents the approximate height (in feet) of a falling object
- $t$
- seconds after it is dropped from an initial height
- $s_0$
- (in feet). A tennis ball falls from a height of 400 feet.

- a. After how many seconds does the tennis ball hit the ground?
- b. Suppose the initial height is decreased by 384 feet. After how many seconds does the ball hit the ground?