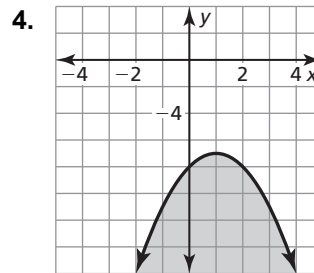
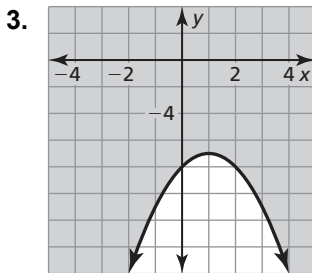
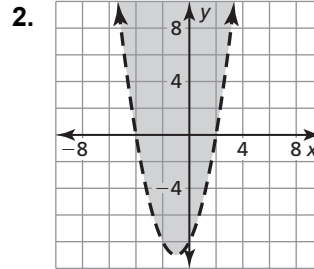
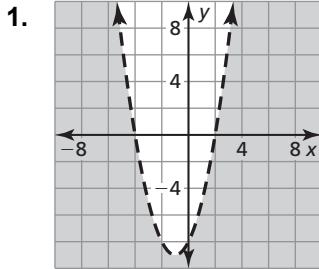


**3.6** Notetaking with Vocabulary (continued)

**Extra Practice**

In Exercises 1–4, match the graph with its inequality. Explain your reasoning.



A.  $y < x^2 + 2x - 8$

B.  $y \leq -x^2 + 2x - 8$

C.  $y > x^2 + 2x - 8$

D.  $y \geq -x^2 + 2x - 8$

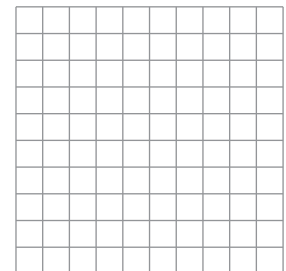
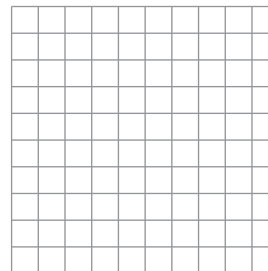
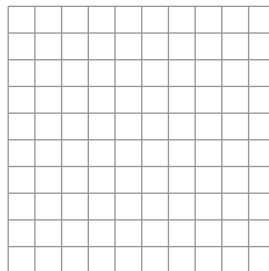
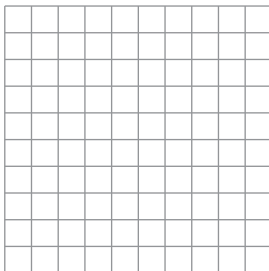
In Exercises 5–8, graph the inequality.

5.  $y < x^2 + 2$

6.  $y \leq -5x^2$

7.  $y \geq -(x + 4)^2 - 1$

8.  $y < 4x^2 + 4x + 1$

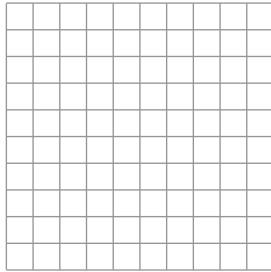


9. Accident investigators use the formula  $d = 0.01875v^2$ , where  $d$  is the braking distance of a car (in feet) and  $v$  is the speed of the car (in miles per hour) to determine how fast a car is going at the time of an accident. For what speeds  $v$  would a car leave a tire mark on the road of over 1 foot?

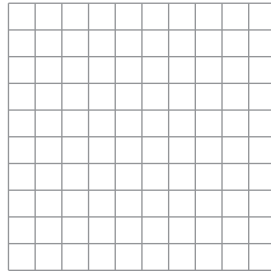
**3.6** Notetaking with Vocabulary (continued)

In Exercises 10–12, graph the system of quadratic inequalities.

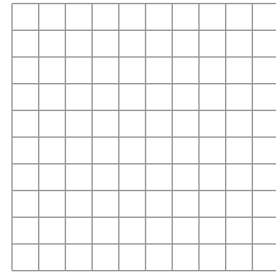
10.  $y \leq -x^2$   
 $y > -3x^2 + 3$



11.  $y \geq x^2 + 5x$   
 $y \geq (x + 2)^2 - 1$



12.  $y > x^2 - 7x - 8$   
 $y < -x^2 + 6x + 5$



In Exercises 13–15, solve the inequality algebraically.

13.  $16x^2 > 100$

14.  $x^2 \leq 15x - 34$

15.  $-\frac{1}{5}x^2 + 10x \geq -25$

16. The profit for a hot dog company is given by the equation  $y = -0.02x^2 + 140x - 2500$ , where  $x$  is the number of hot dogs produced and  $y$  is the profit (in dollars). How many hot dogs must be produced so that the company will generate a profit of at least \$150,000?