

54.  **TAKS REASONING** Two softball players are practicing catching fly balls. One player throws a ball to the other. She throws the ball upward from a height of 5.5 feet with an initial vertical velocity of 40 feet per second for her teammate to catch.
- Write an equation that models the height  $h$  (in feet) of the ball as a function of time  $t$  (in seconds) after it is thrown.
  - If her teammate misses the ball and it lands on the ground, how long was the ball in the air?
  - If her teammate catches the ball at a height of 5.5 feet, how long was the ball in the air? *Explain* your reasoning.
55. **CHALLENGE** A stream of water from a fire hose can be modeled by the graph of  $y = -0.003x^2 + 0.58x + 3$  where  $x$  and  $y$  are measured in feet. A firefighter is holding the hose 3 feet above the ground, 137 feet from a building. Will the stream of water pass through a window if the top of the window is 26 feet above the ground? *Explain*.



## MIXED REVIEW FOR TAKS

**TAKS PRACTICE** at classzone.com

### REVIEW

Lesson 10.1;  
TAKS Workbook

56.  **TAKS PRACTICE** How would the graph of the function  $y = x^2 - 6$  be affected if the function were changed to  $y = x^2 - 3$ ? **TAKS Obj. 5**
- The graph would shift 3 units to the right.
  - The graph would shift 3 units to the left.
  - The graph would shift 3 units up.
  - The graph would shrink vertically.

## QUIZ for Lessons 10.1–10.3

**Graph the function. Compare the graph with the graph of  $y = x^2$ .** (p. 628)

1.  $y = -\frac{1}{2}x^2$

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

3.  $y = -x^2 + 3$

**Graph the function. Label the vertex and axis of symmetry.**

4.  $y = x^2 + 5$  (p. 628)

5.  $y = -5x^2 + 1$  (p. 628)

6.  $y = x^2 + 4x - 2$  (p. 635)

7.  $y = 2x^2 - 12x + 5$  (p. 635)

8.  $y = -\frac{1}{2}x^2 + 2x - 5$  (p. 635)

9.  $y = -4x^2 - 10x + 2$  (p. 635)

**Solve the equation by graphing.** (p. 643)

10.  $x^2 - 7x = 8$

11.  $x^2 + 6x + 9 = 0$

12.  $x^2 + 10x = 11$

13.  $x^2 - 7 = -6x$

14.  $-x^2 + x - 1 = 0$

15.  $x^2 - 4x + 9 = 0$

**Find the zeros of the function.** (p. 643)

16.  $f(x) = x^2 + 3x - 10$

17.  $f(x) = x^2 - 8x + 12$

18.  $f(x) = -x^2 + 5x + 14$

