

# 7.5–7.9 Quiz



**Factor the polynomial.** (Sections 7.6–7.9)

1.  $3d^2 + 11d$

2.  $9z^2 - 18z$

3.  $x^2 + 9x + 20$

4.  $r^2 - 3r - 18$

5.  $2x^2 - 3x + 1$

6.  $3b^2 - 13b + 4$

7.  $x^2 - 9$

8.  $z^2 + 22z + 121$

**Solve the equation.** (Sections 7.5–7.9)

9.  $m^2 - 11m + 18 = 0$

10.  $w^3 - 9w^2 = 0$

11.  $6m^2 - 5m + 1 = 0$

12.  $h^2 - 8 = -3h + 10$

13.  $4s^2 = 144$

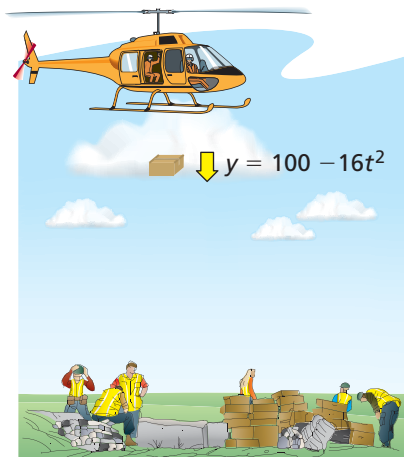
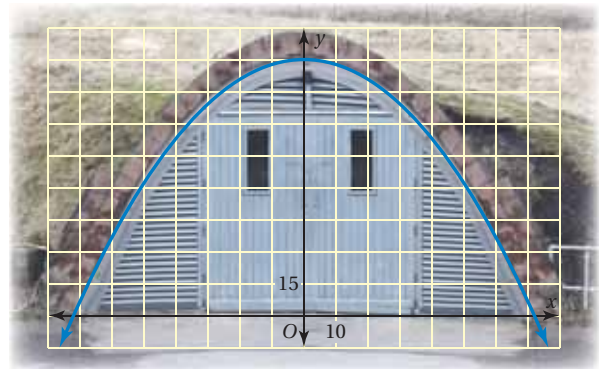
14.  $k^2 + 100 = 20k$

15. **STORAGE** The front of a storage bunker can

be modeled by  $y = -\frac{5}{216}(x - 72)(x + 72)$ ,

where  $x$  and  $y$  are measured in inches. The  $x$ -axis represents the ground. Find the width of the bunker at ground level.

(Section 7.5)



16. **DISASTER RELIEF** A helicopter drops a box of supplies after a disaster. The function represents the height  $y$  (in feet) of the box  $t$  seconds after it is dropped. After how many seconds does the box hit the ground? (Section 7.9)

17. **MAGIC SHOW** A magician's stage has a trap door. (Section 7.7)

- The total area of the stage can be represented by  $x^2 + 27x + 176$ . Write an expression for the width of the stage.
- The area of the trap door is 12 square feet. Find the value of  $x$ .
- What fraction of the area of the stage is the area of the trap door?

