Solve the equation.

1.
$$(x + 14)(x - 3) = 0$$

4.
$$(n-8)(n-9)=0$$

7.
$$(2z - 8)(z + 5) = 0$$

10.
$$(8x + 4)(6x - 3) = 0$$
 11. $(3x + 9)(6x - 3) = 0$

2.
$$(m-12)(m+5)=0$$

4.
$$(n-8)(n-9)=0$$
 5. $(d+8)(d-\frac{1}{2})=0$ **6.** $(c+\frac{3}{4})(c-6)=0$

8.
$$(y-3)(5y+10)=0$$
 9. $(6b-4)(b-8)=0$

11
$$(3x + 9)(6x - 3) = 0$$

3.
$$(p+15)(p+24)=0$$

6.
$$\left(c + \frac{3}{4}\right)(c - 6) = 0$$

9.
$$(6b-4)(b-8)=0$$

12.
$$(4x + 5)(4x - 5) = 0$$

Factor out the greatest common monomial factor.

13.
$$10x - 10y$$

16.
$$4x^2 - 4x$$

19.
$$5p^2q + 10q$$

14.
$$8x^2 + 20y$$

17.
$$r^2 + 2rs$$

20.
$$9a^5 + a^3$$

15.
$$18a^2 - 6b$$

18.
$$2m^2 + 6mn$$

21.
$$6w^3 - 14w^2$$

Solve the equation.

22.
$$m^2 - 10m = 0$$

25.
$$24k^2 + 24k = 0$$

28.
$$6n^2 - 15n = 0$$

31.
$$8c^2 = 4c$$

23.
$$b^2 + 14b = 0$$

26.
$$8r^2 - 24r = 0$$

32.
$$30r^2 = -15r$$

23.
$$b^2 + 14b = 0$$
 24. $5w^2 - 5w = 0$

26.
$$8r^2 - 24r = 0$$
 27. $9p^2 + 18p = 0$

29.
$$-8y^2 - 10y = 0$$
 30. $-10b^2 + 25b = 0$

33.
$$-24v^2 = 9v$$

34. Diving Board A diver jumps from a diving board that is 24 feet above the water. The height of the diver is given by

$$h = -16(t - 1.5)(t + 1)$$

where the height h is measured in feet, and the time t is measured in seconds. When will the diver hit the water? Can you see a quick way to find the answer? Explain.

- **35.** Dog To catch a frisbee, a dog leaps into the air with an initial velocity of 14 feet per second.
 - **a.** Write a model for the height of the dog above the ground.
 - **b.** After how many seconds does the dog land on the ground?
- **36. Desktop Areas** You have two components to the desktop where you do your homework that fit together into an L shape. The two components have the same area.
 - **a.** Write an equation that relates the areas of the desktop components.
 - **b.** Find the value of w.
 - **c.** What is the combined area of the desktop components?

