**EXAMPLES
2 and 3**
on p. 664
for Exs. 20–23

EXERCISES

Solve the equation by completing the square. Round your solutions to the nearest hundredth, if necessary.

20. $x^2 - 14x = 51$

21. $2a^2 + 12a - 4 = 0$

22. $2n^2 + 4n + 1 = 10n + 9$

23. $5g^2 - 3g + 6 = 2g^2 + 9$

10.6 Solve Quadratic Equations by the Quadratic Formula *pp. 671–676*

EXAMPLE

Solve $4x^2 + 3x = 1$.

$$4x^2 + 3x = 1 \qquad \text{Write original equation.}$$

$$4x^2 + 3x - 1 = 0 \qquad \text{Write in standard form.}$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \qquad \text{Quadratic formula}$$

$$= \frac{-3 \pm \sqrt{3^2 - 4(4)(-1)}}{2(4)} \qquad \begin{array}{l}\text{Substitute values in the quadratic formula:}\\ a = 4, b = 3, \text{ and } c = -1.\end{array}$$

$$= \frac{-3 \pm \sqrt{25}}{8} \qquad \text{Simplify.}$$

$$= \frac{-3 \pm 5}{8} \qquad \text{Simplify the square root.}$$

▶ The solutions of the equation are $\frac{-3 + 5}{8} = \frac{1}{4}$ and $\frac{-3 - 5}{8} = -1$.

CHECK You can check the solutions in the original equation.

If $x = \frac{1}{4}$:	If $x = -1$:
$4x^2 + 3x = 1$	$4x^2 + 3x = 1$
$4\left(\frac{1}{4}\right)^2 + 3\left(\frac{1}{4}\right) \stackrel{?}{=} 1$	$4(-1)^2 + 3(-1) \stackrel{?}{=} 1$
$1 = 1$ ✓	$1 = 1$ ✓

**EXAMPLES
1, 2, and 3**
on p. 671–672
for Exs. 24–30

EXERCISES

Use the quadratic formula to solve the equation. Round your solutions to the nearest hundredth, if necessary.

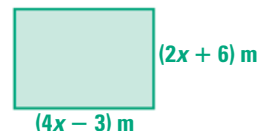**24.** $x^2 - 2x - 15 = 0$

25. $2m^2 + 7m - 3 = 0$

26. $-w^2 + 5w = 3$

27. $5n^2 - 7n = -1$

28. $t^2 - 4 = 6t + 8$

29. $2h - 1 = 10 - 9h^2$

30. The area A of the rectangle shown is 500 square meters. Find the value of x. Then give the dimensions of the rectangle.

(2x + 6) m

(4x − 3) m