

## Other Types of Equations

**Example 2** Using the Algebraic Definition of Absolute Value

Solve  $|x + 4| = 5x - 2$  by using the algebraic definition of absolute value.

**Example 3** Solving an Absolute Value Equation

Solve  $|x^2 + 4x - 3| = 2$ .

**Example 4** Solving a Radical Equation

Solve  $5 + \sqrt{3x - 11} = x$

**Example 5** Using the Power Principle Twice

Solve  $\sqrt{2x - 3} - \sqrt{x + 7} = 2$ .

**Example 7** Solving a Fractional Equation

Solve  $\frac{6x^2 - x - 1}{2x^2 + 9x - 5} = 0$ .

Solve the inequality. Find exact solutions when possible, and approximate them otherwise.

41.  $x^2 - 4x + 3 \leq 0$

43.  $x^2 + 9x + 15 \geq 0$

47.  $x^3 - x \geq 0$

49.  $x^3 - 2x^2 - 3x < 0$

51.  $x^4 - 5x^2 + 4 < 0$

53.  $x^3 - 2x^2 - 5x + 7 \geq 2x + 1$

55.  $2x^4 + 3x^3 < 2x^2 + 4x - 2$