

NAME \_\_\_\_\_

**Module 18** Solving Radical Equations  
**Lesson 1** Solving One-Step Radical Equations

**guided  
notes**

**Lesson Objectives**

- Solve one-step radical equations.
- Determine whether a solution is extraneous by checking.

$$(\sqrt{x})^2 = \underline{x}$$

$$\sqrt{x^2} = \underline{|x|}$$

$$(\sqrt[3]{x})^3 = \underline{x}$$

A radical equation is an equation that has a **variable** \_\_\_\_\_ in the radicand.

To solve a radical equation, first rewrite the equation without **radicals** \_\_\_\_\_. Then, solve the resulting equation.

By squaring both sides of an equation, **extraneous** \_\_\_\_\_ solutions may be generated.

An extraneous solution is a solution that does not satisfy the **original** \_\_\_\_\_ equation. Therefore, an extraneous solution is **not** \_\_\_\_\_ a solution of the equation.

1 Solve and check:  $\sqrt{x} = 12$ .  **$x = 144$**  \_\_\_\_\_

2 Solve and check:  $\sqrt{x} = 7$ .  **$x = 49$**  \_\_\_\_\_

The radical sign indicates the nonnegative square root.

3 Solve and check:  $\sqrt{x} = -6$ . **no solution** \_\_\_\_\_

4 Solve and check:  $-\sqrt{x} = -11$ .  **$x = 121$**  \_\_\_\_\_

5 Solve and check:  $\sqrt[4]{x} = 5$ .  **$x = 625$**  \_\_\_\_\_

