

Algebra 2  
6-5 Solving Equations with Radicals

Name \_\_\_\_\_  
Date \_\_\_\_\_ A#7



**Goal:** To solve square root and other radical equations.

**SOLVE IT!**  
**Getting Ready!**

You are a passenger in the car. You are using a cell phone that connects with the cell phone tower shown. The tower has an effective range of 6 mi. How many miles do you have to finish your call? Justify your answer.

Cell phone tower  
3 miles  
 $p$

**Vocabulary:** A **radical equation** is an equation that has the variable in a \_\_\_\_\_ or with \_\_\_\_\_.

**Example 1: Solving Square Root Equation.** Solve the equation. Check the solution.

a.  $\sqrt{4x+2}=8$

b.  $\sqrt{4x+3}+2=5$

**Practice**

1.  $3\sqrt{x}-8=7$

2.  $\sqrt{3x-2}-7=0$

## Algebra 2

### 6-5 Solving Equations with Radicals

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**Example 2: Solving Equations with Rational Exponents.** Solve the equation. Check the solution.

a.  $(x-2)^{\frac{1}{3}}=5$

b.  $4x^{\frac{3}{2}}-5=103$

### Practice

3.  $(2x+1)^{\frac{1}{3}}=-3$

4.  $2x^{\frac{2}{3}}-2=0$

**Example 3: Checking for Extraneous Solutions.** Solve. Check for extraneous solutions.

a.  $\sqrt{x+1}=x-1$

**Algebra 2****6-5 Solving Equations with Radicals****A#7****Practice:** Solve. Check for extraneous solutions.

5.  $\sqrt{x+6} = x$

**Example 4: Two Radicals!** Solve the equation.

a.  $\sqrt{x+9} - \sqrt{x} = 1$

**Practice**

5.  $\sqrt{5x+4} - \sqrt{x} = 2$