Lesson 5 Solving Radical Equations

A ***radical equation*** is an equation that contains at least one radical with a variable in the radicand. A solution to a radical equation is called the ***root*** of the equation.

Steps to Solving Radical Equations

1. Isolate the radical with the variable in the radicand
2. Square both sides of the equation
3. Check your solutions or use restrictions to identify extraneous roots.

Examples
Solve each equation.

1. $\sqrt{2x} = 4$

2. $3\sqrt{x} = 4$

3. $2\sqrt{x+1}-7=13$

4. $4\sqrt{x}+3=5\sqrt{x}+1$

Example 2

Show that $\sqrt{2x-5}=\sqrt{x-7}$ has an extraneous root.

Example 2

Solve.

1. $\sqrt{x+3}+5=0$

2. $\sqrt{2x+7}-x=-4$

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