

Solving Radical Equations and Absolute Value Equations

Name: Answers.

Per:

**To Solve Radical Equations**

1. \*Find the restricted values for  $x$  if it is an even root. The expression inside an even root cannot be negative ( $\geq 0$ )
2. Isolate the radical (or one of the radicals) to one side of the equation
3. If the radical is a square root, Square each side of the equation. If the radical is not a square root, raise each side to a power equal to the index of the root.
4. Solve the resulting equation
5. Check your answer(s) on the original equation to avoid extraneous solutions.

Solve the following equations. Check your answer and eliminate extraneous solutions, if any.

1.  $\sqrt{2x-1}+5=2$

$x=5$

5.  $\sqrt{x+5}=\sqrt{x^2-15}$

$x=-4, 5$

2.  $x-1=\sqrt{5x-9}$

$x=2, 5$

6.  $\sqrt[3]{1-2x}=3$

$x=-13$

3.  $x-3=\sqrt{30-2x}$

$x=-3, 7$

7.  $\sqrt{x-9}+\sqrt{x}=9$

$x=25$

4.  $3\sqrt{4x-8}+9=15$

$x=3$

8.  $\sqrt{2x-1}=\sqrt{2x+15}-2$

$x=5$