Solving an Equation Involving Radicals

Step 1: Isolate the radical on one side

Step 2: Raise each side of the equation to a power that is the same as the index of the radical so that the radical is eliminated

If the equation still contains a radical, repeat Steps 1 and 2.

Step 3: Solve the resulting equation

Step 4: Check each solution in the original equation.

1. Solve each equation. Be sure to check for extraneous solutions!

   a. $x - \sqrt{15 - 2x} = 0$

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

   c. $\sqrt[3]{4x^2 - 4x + 1} - \sqrt[3]{x} = 0$

2. Solve each equation. Be sure to check your solutions.

   a. $x^{\frac{3}{5}} = 27$

   b. $(x-4)^{\frac{2}{3}} = 16$

4. Simplify $\sqrt{32x} + \sqrt{2x} - \sqrt{18x}$