

# **Solving Radical Equations**

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# Solving Radical Equations

To solve a radical equation:

1. Isolate the radical on one side of the equation.
2. Use the index to determine the power to use to eliminate the radical.
3. Raise both sides of the equation to that power.
3. Solve the resulting equation.
4. Check to see if solution is extraneous.

$$4\sqrt[3]{3x-1} - 8 = -4$$

# Solving Radical Equations

Example:

$$\sqrt{4x - 3} = 8$$

# Solving Radical Equations

Example:

$$(x + 1)^{\frac{1}{2}} = 9$$

# Solving Radical Equations

Example:

$$(2x + 3)^{\frac{1}{3}} - 4 = 0$$

133 Find the solution to:  $\sqrt[4]{5-x} = -2$

**Answer**

134 Find the solution to:  $\sqrt[3]{2y+3} = 5$

**Answer**

135 Find the solution to:  $9\sqrt[5]{2m+1} = 45$

**Answer**



136 Find the solution to:  $4\sqrt[3]{3n-2} + 2 = 7$

**Answer**

137 Find the solution to:  $6\sqrt{4n+2} - 2 = 22$

**Answer**

# Solving Radical Equations

If an equation has multiple roots, move them to opposite sides of the equal sign and then solve.

$$\sqrt{2x+1} - (3x-5)^{\frac{1}{2}} = 0$$

$$\sqrt{x-1} = 3 - \sqrt{x}$$

138 Solve the following:  $\sqrt[3]{3x-2} = (3x-4)^{\frac{1}{3}}$

**Answer**

139 Solve the following:  $4\sqrt{x} = 3 - 5\sqrt{x}$

**Answer**

140 Solve:  $4\sqrt{3p} - 8 = \sqrt{3p} + 10$

**Answer**

141 Solve:  $\sqrt[3]{4x-3} - \sqrt[3]{3x+5} = 0$

**Answer**