

Chapter 12

Section 3

# Solving Radical Equations

# Question

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⦿ How do we solve equations that have a radical in them?

• Ex.  $\sqrt[3]{16} - 5 = 10$

# Answer: Follow these steps

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- Isolate the radical on one side of the equation
- Raise both sides to the appropriate exponent to “undo” the radical
- Solve for the variable
- Check for **extraneous solutions**
  - Plug answers into original problem to check

# Examples:

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1.  $\sqrt{x} - 7 = -4$

2.  $\sqrt{x} + 6 = 14$



# Examples

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3.  $\sqrt{x-2} = 5$

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

# Examples:

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5.  $5\sqrt{x-5} = 5$

6.  $\sqrt{2x-3} + 3 = 4$



# Examples:

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7.  $\sqrt{x} + 13 = 0$

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

# Examples

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9.  $\sqrt{x+2} = x$