
LESSON 15: Solving Radical Equations

- Radical equations
 - The Principle of Powers: If $a = b$, then $a^n = b^n$ for any exponent n
 - Check for extraneous solutions to radical equations
 - To solve an equation with a radical term
 - To solve an equation with two or more radical terms
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Solve the following equations for the unknown variable using either:

Method 1: Algebraic Techniques

Method 2: Graphical Techniques

In either case, be sure to

- Identify each step you take in the solution.
 - **EXPLAIN HOW YOUR STEPS RELATE TO THE ORDER OF OPERATION RULES**
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7. $\sqrt[4]{15x} = 3$

8. $5\sqrt[2]{15x - 3} - 2 = 13$

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

10. $\sqrt[3]{3y+6} + 7 = 8$

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11. $3 + \sqrt{5 - x} = x$

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

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OPTIONAL CHALLENGE PROBLEMS: Solve the following equations for the unknown variable:

13. $\sqrt[2]{4x - 3} = 2 + \sqrt[2]{2x - 5}$

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

15. $\sqrt{6x + 7} - \sqrt{3x + 3} = 1$