

3.2 Solving Radical Equations

Section 1: Find all real solutions of each equation.

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

6. $\sqrt[3]{(x+1)^2} = 4$

2. $\sqrt{4x+9} = 5$

7. $\sqrt{x+7} = x-5$

3. $\sqrt{3x-2} = 7$

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

4. $\sqrt[3]{5-11x} = 3$

9. $\sqrt{3x^2+7x-2} = x+1$

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

10. $\sqrt{4x^2-10x+5} = x-3$

Section 2: Multiple use of $A^n = B^n$ principle.

11. $\sqrt{3x+1} - 1 = \sqrt{x+4}$

12. $\sqrt{2x-5} = 1 + \sqrt{x-3}$

13. $\sqrt{3x+5} + \sqrt{2x+3} + 1 = 0$

Section 3: Solving literal equations. Solve each equation for the required variable.

14. $R = \sqrt{d^2 + k^2}$ for d

15. $A = \sqrt{1 + \frac{a^2}{b^2}}$ for b