

Name:

Period:

Date:

Practice Worksheet: Solving Radical Equations

Solve each radical equation. None of these problems will have extraneous solutions. You must show work and your answers must be correct to get credit.

Level 1	Level 2	Level 3
1] $\sqrt{x} + 3 = 12$ $x = 81$	6] $-6 = \sqrt{x - 25} - 8$	11] $2\sqrt{3x + 7} - 1 = 7$ $x = 3$
2] $\sqrt[3]{x} - 10 = -3$	7] $\sqrt[3]{x - 16} + 4 = 6$ $x = 24$	12] $-4\sqrt[3]{x + 10} + 3 = 15$
3] $\sqrt{4x + 1} = \sqrt{x + 10}$ $x = 3$	8] $\sqrt[3]{12x - 5} = \sqrt[3]{8x + 15}$	13] $\sqrt[4]{3x - 11} = \sqrt[4]{5 - x}$ $x = 4$
4] $(3x - 4)^{1/3} = 2$	9] $(x - 5)^{5/3} - 73 = 170$ $x = 32$	14] $\frac{1}{7}(x + 9)^{3/2} = 49$
5] $x^{2/3} + 45 = 70$ $x = \pm 125$	10] $5(x - 4)^{4/3} = 80$	15] $10(x - 5)^{2/5} - 25 = 15$ $x = 37, -27$

Solve each radical equation. Check for extraneous solutions. You must show work and your answers must be correct to get credit.

Level 4

16] $\sqrt{24 - 2x} = x$

~~200~~ $x = 4$

Level 5 (Extra Credit)

19] $\sqrt{2x - 7} = x - 3$

$x = 4$

17] $2\sqrt[3]{x + 2} = \sqrt[3]{4x + 56}$

$x = 10$

20] $\sqrt{1 + 5x^2} = 3x$

18] $\sqrt{5x + 1} = \sqrt{5x + 11}$

21] $\sqrt{2x + 3} + 2 = \sqrt{6x + 7}$

$x = 3$