

1.4 Radical Equations WS 2

Find all roots.

1) $x^3 - 125 = 0$

$$x = 5, \frac{-5 \pm 5i\sqrt{3}}{2}$$

2) $x^4 - 2x^3 - 3x^2 + 6x = 0$

$$x = 0, 2, \pm\sqrt{3}$$

3) $x^3 - 4x^2 + 2x - 8 = 0$

$$x = 4, \pm i\sqrt{2}$$

4) $x^4 - 5x^2 - 6 = 0$

$$x = \pm i, \pm\sqrt{6}$$

Solve each equation. Remember to check for extraneous solutions.

5) $\frac{x-4}{x^2} - \frac{1}{x^2} = \frac{1}{2x^2}$ $x = \frac{11}{2}$

6) $\frac{1}{n^2} = \frac{1}{5n^2} + \frac{2}{5n}$ $n = 2$

7) $\frac{3p}{p+5} - \frac{5p^2+3p-2}{p^2-p-30} = 1$ $p = \frac{4}{3}, -8$

8) $\frac{x^2+7x+6}{x^2+7x+12} = 1 + \frac{6x+36}{x+3}$ $x = -5$

9) $\sqrt{5n-4} = n-2$ $n = 8$

10) $\sqrt{6+5a} = a$ $a = 6$

11) $\sqrt{9-v} = 2 - \sqrt{2v+6}$ \emptyset

12) $\sqrt{7b-3} - 4 = \sqrt{9-2b}$ $b = 4$