

Solving Radical Equations

Warm-up: Simplify.

1. $\sqrt[4]{16x^4y^{16}}$

2. $\sqrt[3]{64x^6y^3z^{12}}$

3. $\sqrt{16x^6y^{10}z^2}$

Examples: Simplify the radicals.

1. $\sqrt{9x^3}$

2. $\sqrt[3]{16x^5}$

3. $\sqrt[4]{32a^8b^5}$

4. $\sqrt[3]{250x^4y^2}$

5. $\sqrt[3]{81y^7}$

Examples: Solve Radical Equations. Check for Extraneous Solutions.

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

7. $\sqrt[3]{x} + 2 = 4$

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

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

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

11. $x = \sqrt{7x+8}$

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

Examples: Solve Equations With Rational Exponents. Check for extraneous solutions.

13. $(x^2 + 5x + 5)^{\frac{5}{2}} = 1$

14. $(x+18)^{\frac{3}{2}} = (x-2)^3$

15. $(x^2 - 3x - 6)^{\frac{3}{2}} - 14 = -6$