

Watch. Practice. Understand. | Lesson 011

Simplifying Radical Expression and Variables With Rational Exponents

Watch the matching video: <https://www.youtube.com/watch?v=GVZYS50AVsU>

Practice focus: Radicals and rational exponents

Original extra practice matched to the listed lesson topic.

Name: _____ Date: _____ Show your reasoning and check units.

01 Simplify $\sqrt{72}$.

02 Simplify $3\sqrt{8} - \sqrt{18} + 2\sqrt{2}$.

03 Evaluate $27^{(2/3)}$ and $16^{(-3/4)}$.

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

Worked answers | Lesson 011

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01 Simplify $\sqrt{72}$.

$$72 = 36(2), \text{ so } \sqrt{72} = 6\sqrt{2}.$$

02 Simplify $3\sqrt{8} - \sqrt{18} + 2\sqrt{2}$.

$$6\sqrt{2} - 3\sqrt{2} + 2\sqrt{2} = 5\sqrt{2}.$$

03 Evaluate $27^{(2/3)}$ and $16^{(-3/4)}$.

$$27^{(1/3)} = 3, \text{ then square: } 9. \quad 16^{(1/4)} = 2, \text{ then reciprocal cube: } 1/8.$$

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

$$\text{Require } x \geq -1. \text{ Squaring gives } x + 5 = x^2 - 2x + 1, \text{ so } (x - 4)(x + 1) = 0. \text{ Only } x = 4 \text{ checks.}$$