Honors Algebra 2

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Contents

CHAPTER ONE

Radical and Polynomial Operations

Lesson 1: Rational Exponents

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In this lesson, I go over how you:

- Convert radical expressions to rational exponents.
- Convert rational exponents to radical expressions.

Definition 1 (Simplifying radical expressions)**.** Rational expressions can be written as radical exponents.

$$t^{\frac{3}{4}} = t^{\frac{3}{4}} \times t^{\frac{3}{4}} \times t^{\frac{3}{4}}.$$
$$\sqrt[4]{t^3} = \sqrt[4]{t} \times \sqrt[4]{t} \times \sqrt[4]{t}.$$
$$t^{\frac{3}{4}} = \sqrt[4]{t^3}.$$

Definition 2 (Simplifying radical expressions)**.** Radical expressions can be written as rational exponents.

$$\sqrt[5]{x^3} = \sqrt[5]{x} \times \sqrt[5]{x} \times \sqrt[5]{x}.$$
$$x^{\frac{3}{5}} = x^{\frac{1}{5}} \times x^{\frac{1}{5}} \times x^{\frac{1}{5}}.$$
$$x^{\frac{3}{5}} = \sqrt[5]{x^3}.$$

Quiz Questions

Question 1. Which of the following is the radical expression of $4d^{\frac{3}{8}}$?

Answer

$\sqrt[8]{4d^3}$

Question 2. Which of the following is the radical expression of $4d^{\frac{3}{8}}$?

Answer

$4\sqrt[8]{d^3}$

Question 3. Which of the following is the rational exponent expression of $\sqrt[4]{f}$

Answer

$f^{\frac{1}{4}}$

Question 4. Which of the following is the rational exponent expression of $\sqrt[3]{4n}$

Answer

$4n^{\frac{1}{3}}$

Question 5. Which of the following is the simplified form of $\sqrt[5]{x} \times \sqrt[5]{x} \times \sqrt[5]{x} \times \sqrt[5]{x}$

Answer

$x^{\frac{4}{5}}$

Todo list