

April 13

Quiz on Wed April 15

MCR3U  
Mr. Park

Rational Exponents

= Fractional Exponents

4. Simplify. Express your answer using only positive exponents.

$$a. \frac{x^{\frac{2}{3}}x^{\frac{2}{3}}}{x^{\frac{1}{3}}} = \frac{x^{\frac{2}{3}+\frac{2}{3}}}{x^{\frac{1}{3}}} = \frac{x^{\frac{4}{3}}}{x^{\frac{1}{3}}} = x^{\frac{4}{3}-\frac{1}{3}} = x^{\frac{3}{3}} = x^1 = x$$

$$b. \left(5x^{\frac{1}{2}}\right)^2 \left(4x^{-\frac{1}{2}}\right) \rightarrow (5^2 x^{\frac{1}{2} \times 2}) = 25x^1$$

$$(AB)^2 = A^2B^2 \quad (2 \cdot 5)^2 = 100$$

$$= 2^2 \cdot 5^2 = 100$$

$$= (25x^1)(4x^{-\frac{1}{2}}) = 100x^{1-\frac{1}{2}} = 100x^{\frac{1}{2}} = 100\sqrt{x}$$

5. Express  $\sqrt{5}$  as an expression with exponents.

$$\sqrt{5} = 5^{\frac{1}{2}}$$

6. Express  $\sqrt[6]{7}$  as an expression with exponents.

$$\sqrt[6]{7} = 7^{\frac{1}{6}}$$

7. Express  $\sqrt[4]{10000m^8}$  as an expression with exponents, then evaluate.

$$\sqrt[4]{10000m^8} = \sqrt[4]{10^4 \cdot m^8} = \sqrt[4]{10^4} \cdot \sqrt[4]{m^8} = 10 \cdot m^{8 \times \frac{1}{4}}$$

$$= 10m^2$$

\* Youtube: "Zero, Negative and Fractional Exponents" by Khan Academy

Homework: pg. 175 #1-8, 12