Algebra 1: 5.5 Guided Notes – Part 2 **Name** _____ **Period** _____
Properties of Rational Exponents

Learning Goals
- *Simplify expressions with rational exponents.*
- *Write rational powers using radicals.*

A ***rational exponent*** is _____.

You can write each *n*th root using a rational exponent. If n is an integer greater than 1, then _____.

Write each radical as a power.

1. $\sqrt[3]{7}$
2. $\sqrt[5]{x}$
3. $\sqrt{y}$

Write each power as a radical.

1. $8^{\frac{1}{4}}$
2. $z^{\frac{1}{6}}$
3. $m^{\frac{1}{7}}$

Converting between **Radical Form** and **Rational Exponent Form**

$$\sqrt[\square]{x^{\square}} = x^{\frac{\square}{\square}}$$

Think "EOI" – Exponent over Index"

Write each expression in <u>radical form</u>. Show your work and simplify your answer, if possible.

1. $4^{\frac{3}{2}}$
2. $5^{\frac{3}{4}}$
3. $x^{\frac{4}{5}}$
4. $y^{\frac{2}{3}}$

Write each expression in <u>rational exponent form</u>. Show your work and simplify your answer, if possible.

1. $\left(\sqrt[4]{2}\right)^3$
2. $\left(\sqrt{5}\right)^4$
3. $\left(\sqrt[5]{x}\right)^8$
4. $\left(\sqrt[5]{y}\right)^{10}$