



Rational Exponents and Radicals

Today's Standard

HSN.RN.A1 - Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define $5^{(1/3)}$ to be the cube root of 5 because we want $(5^{(1/3)})^3 = 5^{(1/3 * 3)}$ to hold, so $(5^{(1/3)})^3$ must equal 5.

Cues	Notes
What are rational exponents?	Rational exponents are exponents that are fractions.
Why extend integer exponents?	Extending integer exponents to rational exponents allows for a more comprehensive understanding of exponents and roots.
How to convert radicals to rational exponents?	To convert a radical to a rational exponent, use the notation $a^{(m/n)}$ where 'm' is the power and 'n' is the root.
Common misconceptions about rational exponents	Common misconceptions include thinking rational exponents are different from integer exponents and confusing them with fractional coefficients.

Summary

Rational exponents extend the properties of integer exponents to include fractional values, allowing for a unified understanding of exponents and roots. Understanding this concept is crucial for advanced mathematical topics.