07 Topic: Irrational & Fractional Exponents

Content Area: **Mathematics**
Course(s): **Algebra 2**
Time Period: **Semester 1**
Length: **2 weeks**
Status: **Published**

Standards

MA.N-RN.A.1	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.
MA.N-RN.A.2	Rewrite expressions involving radicals and rational exponents using the properties of exponents.
MA.N-RN.B.3	Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.
MA.K-12.6	Attend to precision.
MA.K-12.8	Look for and express regularity in repeated reasoning.

Enduring Understandings

1. Mathematics is a language consisting of symbols and rules.
2. The same mathematical ideas can be represented concretely or symbolically.
3. There can be different strategies to solve a problem, but some are more effective and efficient than others.

Essential Questions

How will the student perform operations with radical expressions with different indexes and expressions with fractional exponents?

Does the order of evaluating the numerator and denominator matter?

Knowledge and Skills

- Simplify radical expressions
- Simplify with rational exponents

- Simplify radicals and expressions with different root indexes
- Multiply radical expressions with different root indexes
- Add and Subtract radical expressions
- Divide and rationalize with monomial and binomial denominators
- Simplify irrational expressions
- Simplify expressions with rational exponents

Transfer Goals

Using mathematical reasoning and strategic thinking can allow for practical solutions ot many problems.

Often unique vocabulary and implementation methods are needed to solve problems.

Resources

1. McDougal/Littell - Algebra & Trigonometry Structure & Method Book 2
2. Aufmann/Barker/Lockwood - Intermediate Algebra with Applications Sixth Edition
3. Houghton/Mifflin/Harcourt - On Core Mathematics Algebra 2
4. Holt - Algebra 2 with Trigonometry
5. Larson/Boswell - Big Ideas Math: Algebra 2 Texas Edition
6. Khan Academy
7. PurpleMath
8. KutaSoftware
9. CK-12
10. Quizlet
11. Albert I/O
12. Desmos

13. Problem Attic