Unit 06: Alg2Ac Chapter 6): Radical Functions and Rational Exponents

Content Area: **Math**
Course(s): **Level 1 Engineering Drawing, Algebra 2 CP, Algebra 2 A, Algebra 2 H**
Time Period: **Marking Period 3**
Length: **4 weeks**
Status: **Published**

Unit Introduction

Standards

MA.F-BF.A.1b	Combine standard function types using arithmetic operations.
MA.F-BF.B.4a	Solve an equation of the form $f(x) = c$ for a simple function f that has an inverse and write an expression for the inverse.
MA.F-IF.C.8	Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.
MA.F-IF.C.7b	Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.
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.A-CED.A.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.
MA.A-REI.A.2	Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.
MA.A-SSE.A	Interpret the structure of expressions
MA.A-SSE.A.2	Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.

Essential Questions

- How are a function and its inverse function related?
- When you square each side of an equation, is the resulting equation equivalent to the original?

Content

- Sec 6.1 - Roots and Radical Expressions (pg. 361)
- Sec 6.2 - Multiplying and Dividing Radical Expressions (pg.367)

- Sec 6.3 - Binomial Radical Expressions (pg. 374)
- Sec 6.4 - Rational Exponents (pg. 381)
- Sec 6.5 - Solving Square Root and Other Radical Equations (pg. 390)
- Sec 6.6 - Functions Operations (pg. 398)
- Sec 6.7 - Inverse Relations and Functions (pg. 405)
- Sec 6.8 - Graphing Radical Functions (pg. 414)

Skills

- Composing functions
- Covert radicals to rational exponent
- Find the equation of an inverse
- Find the inverse of a relation
- Finding an inverse function
- Graph a cube root function
- Graph a square root function
- Graphing a relation and its inverse
- Multiply and divide radical expressions
- Multiply conjugates
- Operations on functions
- Operations on radical expressions
- Rational a denominator
- Rewrite a radical function
- Simplify exponential expressions
- Simplify radicals
- Simplifying a product
- Simplifying a radical expression
- Solve a radical equation by graphing
- Translate a square root function vertically and horizontally
- Using composite functions
- Using radical expressions