Unit 07: Alg2Ac (Chapter 7): Exponential and Logarithmic Functions

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.A-SSE.A.1b	Interpret complicated expressions by viewing one or more of their parts as a single entity.
MA.F-IF.C.7e	Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.
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.9	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).
MA.F-BF.A.1b	Combine standard function types using arithmetic operations.
MA.A-CED.A.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
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-LE.A.4	Understand the inverse relationship between exponents and logarithms. For exponential models, express as a logarithm the solution to ab to the ct power $= d$ where a, c, and d are numbers and the base b is 2, 10, or e; evaluate the logarithm using technology.
MA.A-REI.D.11	Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

Essential Questions

- How are exponential and logarithmic functions related?
- How are exponents and logarithms related?
- How do you model a quantity that changes regularly over time by the same percentage?

Content

- Sec 7.1 - Exploring Exponential Models (pg. 434)

Skills

- Applications of Interest
- Evaluating e^x
- Expand logarithmic expressions
- Graphing exponential equations
- Graphing logarithmic equations
- Identify and model exponential growth and decay
- Modeling an exponential equation
- Perform operations with exponents
- Simplify logarithmic expressions
- Solving exponential equations
- Translating a logarithmic function
- Translating exponential functions
- Using an exponential model
- Write an exponential function