

# Alg2CP Unit 07 (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)

- Sec 7.2 - Properties of Exponential Functions (pg. 442)
- Sec 7.3 - Logarithmic Functions as Inverses (pg. 451)
- Sec 7.4 - Properties of Logarithms (pg. 462)
- Sec 7.5 - Exponential and Logarithmic Equations (pg. 469)
- Sec 7.6 - Natural Logarithms (pg. 478)

## **Skills**

---

- Expand logarithmic expressions
- Graphing exponential equations
- Graphing logarithmic equations
- Perform operations with exponents
- Simplify logarithmic expressions