

Grade 9 - 11

Distance Learning Module 9: Week of: 6/1/2020-6/5/2020

Exponential Functions

**Algebra II Level 2 - Modified from [Unit 6- Exponential, Logarithmic and Additional Inverse Functions](#)**

**Targeted Goals from Stage 1: Desired Results**

**Content Knowledge:** Explore continuous compound interest and natural base  $e$ , introduce the concept of logarithms and how they are inverses of exponential functions, rewriting exponential to logarithmic and logarithmic to exponential, relation of natural logs to base  $e$

**Vocabulary:**  $e$ , continuous, logarithm, common and natural logarithms, half-life

**Skills:**

- Rewrite exponential format to logarithmic format and vice versa.
- Solving problems related to continuous growth and continuous compound interest.
- Identify the relationship between natural logs and base  $e$

**Expectation:**

Description of Task (s):	Resources and Materials:	Daily Checks (Return to Google Classroom or snapshots from a cell phone)
Monday: Natural Base $e$	slides 46-48 $e$ and compound interest (video)   Logarithms $e$ as a limit (video)   Logarithms	
Tuesday: Modeling with $e$	slides 52-55	Continuous Compounded Interest
Wednesday: Definition of logarithm	slides 71-80 Intro to logarithms (video)   Logarithms Relationship between exponentials & logarithms (video)	Exponents / Logs Evaluate logarithms (practice)   Logarithms
Thursday: common vs natural logs	slides 81-82 Common and Natural Logs	Common and Natural Problems
Friday: review of evaluating logarithms	slides 71-82	Graded End of Module Assignment

**Week criteria for success** (attach student checklists or rubrics):

Students will be able to:

1. model exponential growth and decay with the natural base,  $e$
2. evaluate common and natural logarithms

**Supportive resources and tutorials for the week** (plans for re-teaching): Khan Academy videos, Kuta software extra practice worksheets, office hours

1. slides unit F
2. Logarithm Practice Mixed
3. Extra Practice Rewriting Logarithms