

Learning Targets

Exponential Functions and Equations

Lesson 1: Growing and Shrinking

- I understand how to calculate values that are changing exponentially.

Lesson 2: Representations of Growth and Decay

- I understand that exponential functions change by equal factors over equal intervals.

Lesson 3: Understanding Rational Inputs

- I can determine the value of exponential functions at non-whole number inputs.

Lesson 4: Representing Functions at Rational Inputs

- I understand how to calculate a growth or decay factor of an exponential function for different input intervals.

Lesson 5: Changes Over Rational Intervals

- I can explain why an exponential function changes by the same factor over equal intervals, even when those intervals are not whole numbers.

Lesson 6: Writing Equations for Exponential Functions

- I can write equations for exponential functions from two input-output pairs, even when the input pairs are not one unit apart.

Lesson 7: Interpreting and Using Exponential Functions

- I can use the half-life of elements to calculate how much of the element remains over time.

Lesson 8: Unknown Exponents

- I can approximate the value of unknown exponents.

Lesson 9: What is a Logarithm?

- I understand that a logarithm is a way to represent an exponent in an exponential equation.

Lesson 10: Interpreting and Writing Logarithmic Equations

- I understand how to evaluate a logarithmic expression.

Lesson 11: Evaluating Logarithmic Expressions

- I can use known values of logarithms to estimate the value of other logarithms.
- I can use technology to determine the value of a logarithm.

Lesson 12: The Number e

- I know that e is an irrational constant, like π , that has a value of about 2.718.

Lesson 13: Exponential Functions with Base e

- I understand that e is used in exponential models when we assume the growth rate is applied at every moment.

Lesson 14: Solving Exponential Equations

- I can solve simple exponential equations using logarithms.

Lesson 15: Using Graphs and Logarithms to Solve Problems (Part 1)

- I can solve exponential equations using logs or by graphing

Lesson 16: Using Graphs and Logarithms to Solve Problems (Part 2)

- I can calculate where two exponential graphs meet using logarithms.
- I can interpret the intersection of the graphs of two exponential functions in context.

Lesson 17: Logarithmic Functions

- I can interpret logarithmic functions in context.

Lesson 18: Applications of Logarithmic Functions

- I understand how logarithms are used to measure things like acidity and the intensity of earthquakes.