

Acquire critical thinking and problem-solving skills.

- Analyze functions. Routine analysis includes discussion of domain, range, zeros, general function behavior (increasing, decreasing, extrema, etc.). In addition to showing procedural fluency, the student can articulate reasons for choosing a particular process, recognize function families and anticipate behavior, and explain the implementation of a process
- Interpret functions that arise in applications in terms of the context. Determine a reasonable applied domain for the model as well as articulate the limitations of the model
- Determine parameters of a model (linear, quadratic, exponential given the form of the model and data
- Build a function that models a relationship between two quantities and build new functions from existing functions.
- Convert between different representations of functions, Perform operations with functions including addition, subtraction, multiplication, division, composition, and inversion
- Demonstrate an understanding of the correspondence between the solution to an equation, the zero of a function, and the x- intercepts.

Strengthen quantitative reasoning skills

- Distinguish between situations that can be modeled by linear or exponential functions.
- Interpret functions that arise in applications in terms of the context. Determine a reasonable applied domain for the model as well as articulate the limitations of the model
- Convert between different representations of functions, Perform operations with functions including addition, subtraction, multiplication, division, composition, and inversion.
- Interpret the parameters in an exponential function in terms of a context.
- For exponential functions use properties of logarithms to express the solution.

Understand basic concepts of the academic discipline

- Create linear models from data and interpret slope as rate of change. Understand the connections between proportional relationships, lines, and linear equations.
- Interpret the parameters in a linear function in terms of a context.
- Use correct consistent, and coherent notation throughout the solution process to a given equation or inequality.
- Solve systems of equations using graphical, substitution or elimination methods.
- Recognize when a result is applicable and use the result to make sound logical conclusions, provide counter-examples to conjectures.

- Anticipate the output from a graphing utility and make adjustments, as needed, in order to efficiently use the technology to solve a problem.
- Use technology to verify solutions to equations and inequalities which are difficult to obtain algebraically and know the difference between approximate and exact solutions.
- Distinguish between exact and approximate solutions and which methods results in which kind of solutions.