10675/10775/11010 Algebra for Calculus (5/4/3)

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.

Recognize function families as they appear in equations and inequalities and choose an appropriate solution methodology for a particular equation or inequality and can communicate reasons for that choice.

Demonstrate an understanding of the correspondence between the solution to an equation, the zero of a function, and the point of intersection of two curves.

Purposefully create equivalencies and indicate when they are valid.

Recognize opportunities to create equivalencies in order to simplify workflow.

Determine parameters of a model given the form of the model and data.

Determine a reasonable applied domain for the model as well as articulate the limitations of the model.

Anticipate the output from a graphing utility and make adjustments, as needed, in order to efficiently use the technology to solve a problem.

Strengthen quantitative reasoning skills

Recognize function families as they appear in equations and inequalities and choose an appropriate solution methodology for a particular equation or inequality and can communicate reasons for that choice.

Demonstrate an understanding of the correspondence between the solution to an equation, the zero of a function, and the point of intersection of two curves.

Purposefully create equivalencies and indicate when they are valid.

Recognize opportunities to create equivalencies in order to simplify workflow.

Interpret the function correspondence and behavior of a given model in terms of the context of the model.

Create linear models from data and interpret slope as rate of change.

Determine parameters of a model given the form of the model and data.

Determine a reasonable applied domain for the model as well as articulate the limitations of the model.

Recognize when a result is applicable and use the result to make sound logical conclusions and provide counter-examples to conjectures.

Understand basic concepts of the academic discipline

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

Convert between different representations of a function.
Perform operations with functions including addition, subtraction, multiplication, division, composition, and inversion.

Recognize function families as they appear in equations and inequalities and choose an appropriate solution methodology for a particular equation or inequality and can communicate reasons for that choice.

Demonstrate an understanding of the correspondence between the solution to an equation, the zero of a function, and the point of intersection of two curves.

Use correct, consistent, and coherent notation throughout the solution process to a given equation or inequality.

Distinguish between exact and approximate solutions and which methods results in which kind of solutions.