Math 11009 Modeling Algebra (4)

Learning Outcomes for Modeling Algebra (4), Math 11009

Knowledge

Master algebraic techniques and manipulations necessary for problem solving and modeling in this course.

Comprehension

With the aid of a spreadsheet, graphing calculator, or similar technology, students can construct a model that captures essential features of a situation described by discrete data. Compare and contrast characteristics (numeric, graphical, symbolic) of functions studied in the course: linear, quadratic, exponential, logarithmic, polynomial.

Application

Student can use a function model to analyze and interpret a situation described verbally or with data.

Analysis

Analyze a given set of real-world discrete data numerically and graphically and determine which of the elementary functions would be an appropriate mathematical model.

Synthesis

Describe the role and usefulness of mathematical modeling in the decision making process of social and life scientists, business personnel and government agencies. Develop a personal framework of problem-solving techniques. Analyze the relevance of mathematical modeling to their field of study and give at least one concrete example.

Evaluation

Critique the appropriateness of the mathematical model chosen by their peers during in-class presentations. Evaluate group dynamics within their group.

Class Activities

Small group problem-solving, group presentations, activities with motion sensor, mini-lectures, group and individual quizzes, individual exams

Out of class Activities

Reading the textbook and watching videos, online homework assignments, lab write-ups, small group projects