College Algebra

Purpose

This class is designed to emulate an entry level college mathematics course. Particular attention is given to solidifying Algebra II understanding. Progression is made to Algebra III topics which prepare the students for future math courses.

Grading

The nine-week's grade is determined by calculating the total points earned over the total points possible. Homework is given regularly and is either collected and checked for accuracy or simply checked for completion. In the grade book, any homework worth five points is one where completion was graded. If a student receives a score less than five points, it is due to the work being inadequate (partially done/necessary steps not provided) or late. Two to three exams will be given per chapter. Exams will always be preceded by a review closely emulating what will be seen the following day.

Topics Covered

1st 9-Weeks: Chapter 1

- Real Numbers
- Approximations; Calculators
- Integer Exponents
- Polynomials
- Factoring Polynomials
- Rational Expressions
- Square Roots; Radicals
- Rational Exponents
- Geometry Topics

2nd 9-Weeks: Chapter 2

- Equations
- Setting Up Equations: Applications
- Quadratic Equations
- Other Types of Equations
- Inequalities

- Linear Inequalities
- Polynomial and Rational Inequalities
- Equations and Inequalities Involving Absolute Value

3rd 9-Weeks: Chapter 3, Chapter 4 and Chapter 5

- Rectangular Coordinates; Scatter Diagrams
- Graphs of Equations
- Lines
- Parallel and Perpendicular Lines; Circles
- Linear Curve Fitting
- Variation
- Functions
- Transformations
- Operations on Functions; Composite Functions
- Mathematical Models; Constructing Functions
- Quadratic Functions
- Polynomial Functions
- Rational Functions
- Synthetic Division
- Finding Real Zeros
- Complex Numbers
- Complex Zeros

4th 9-Weeks: Chapter 6 and Chapter 8

- One-to-One Functions; Inverse Functions
- Exponential Functions
- Logarithmic Functions
- Properties of Logarithms
- Logarithmic and Exponential Equations
- Compound Interest
- Growth and Decay
- Logarithmic Scales
- Systems of Linear Equations
- Matrices
- Determinants
- Encrypting