

## Algebra 1

## I. Course Description

Algebra I is an extension of arithmetic, and the concepts and procedures of arithmetic are used as the foundation upon which the study of algebra is built. This course uses mathematical ideas in solving problems ranging from everyday applications to applications in the physical and biological sciences.

## II. Instructional Materials

*Algebra 1 Second Ed.* Published by A Beka 2002

## III. Goals and Objectives

1. To identify the nature of Algebraic numbers
2. To be able to read and use graphs
3. To apply the arithmetic rule
4. To define and apply algebraic formulas
5. To distinguish positive and negative numbers
6. To learn fundamental operations including, adding monomials, polynomials, and word problems
7. To identify and distinguish special products and factoring
8. To solve, reduce, change, add, and subtract algebraic fractions
9. To learn ratio, proportion and variation
10. To solve linear equations
11. To draw graphs and equations
12. To learn powers and roots
13. To define exponents and radicals
14. To solve quadratic equations
15. To explain numerical trigonometry

## IV. Course Outline

Semester one:

1. Describe the nature of algebraic numbers
2. Write and use graphs
3. Solve and graph formulas
4. Identify and use positive and negative numbers
5. Perform fundamental operations
6. Identify and practice products and factoring
7. Solve fractions
8. Mid-term

Semester two:

1. Identify ratio, proportion, and variation
2. Solve linear equations
3. Find powers and roots
4. Identify exponents and radicals
5. Solve quadratic equations
6. Define numerical trigonometry
7. Final exam

#### V. Teaching Methods

1. Daily lessons from text and activities
2. Daily video lecture
3. Parent/student interaction/conversation

#### VI. Evaluation

##### 1. Components

- A. Problem solving homework
- B. Tests and quizzes
- C. Mid-term
- D. Final Exam

##### 2. Grading:

- A. 90-100
- B. 80-89
- C. 70-79
- D. 60-69