

# Algebra Course Information

**Overview:** Algebra 1 is the foundational math course for all higher level math classes. The concepts in Algebra pop up regularly throughout all other high school math classes. A traditional curriculum is used that covers everything you would expect to find in a standard Algebra 1 course including linear equations, quadratics, exponents, radicals, and more.

**Scope and Sequence:** The course is broken down into units. Below are the primary concepts from each unit. **Note: This is not a complete list of course content.**

- **Unit 1:** Order of Operations, Like Terms, Distribution, Algebraic Properties
- **Unit 2:** Sets of Numbers, Working with Rational Numbers, Square Roots
- **Unit 3:** Solving One-Step, Multi-Step and Complex Equations, Ratios, Proportions
- **Unit 4:** Functions and Relations, Equations in Two Variables
- **Unit 5:** Slope, Slope-Intercept Form, Point-Slope Form, Graphing Linear Equations
- **Unit 6:** Solving and Graphing Linear Inequalities, Absolute Value Equations
- **Unit 7:** Solving Linear Systems, Substitution, Elimination, Systems of Inequalities
- **Unit 8:** Exponent Laws, Scientific Notation, Compound Interest, Exponential Functions
- **Unit 9:** Adding, Subtracting and Multiplying Polynomials, Various Factoring Techniques
- **Unit 10:** Graphing Parabolas, Solving Quadratic Equations Using Various Techniques
- **Unit 11:** Rational Expressions, Dividing Polynomials, Solving Rational Equations
- **Unit 12:** Simplifying Radicals, Solving Radical Equations, Pythagorean Theorem

**Assignments/Homework:** Assignments are usually about 15-20 problems. Normally, an assignment will be a mix of problems covering the day's lesson and a scattered review of past concepts. Assignments should take about 45 mins. to complete. Upon completion, assignments are to be corrected by the student using the answer key and investigated to determine what (if any) areas require review.

**Quizzes and Tests:** Regular quizzes are taken online and students receive instant feedback on how they did. Quizzes are meant to be taken without books, notes, or other forms of help. Formal tests are taken via the traditional "paper and pencil" format.

## Materials/Supplies:

- Students are expected to take notes. A binder or notebook typically works the best.
- Graph paper
- Scientific calculator
- Ruler/straightedge