Algebra 2 AA Topics – Mrs. Cotton

First Semester

Analyzing Equations and Inequalities
- Expressions and Formulas
- Properties of Real Numbers
- Graphs and Measures of Central Tendency
- Expressions and Formulas
- Properties of Real Numbers
- Graphs and Measures of Central Tendency
- Solving Equations
- Solving Inequalities
- Solving Absolute Value Equations
- Solving Absolute Value Inequalities

Graphing Linear Relations and Functions
- Relations and Functions
- Linear Equations
- Slope
- Writing Linear Equations
- Modeling Real-World Data Using Scatter Plots
- Special Functions
- Special Functions
- Linear Inequalities

Linear Systems
- Graphing Systems of Equations
- Solving Systems Algebraically
- Systems of Inequalities
- Linear Programming
- Graphs in Three Dimensions (if time allows)
- Systems with Three Variables

Quadratic Equations and Functions
- Modeling Data with Quadratic Equations
- Properties of Parabolas
- Transforming Parabolas
- Factoring Quadratic Expressions
- Quadratic Equations
- Complex Numbers
- Completing the Square
- The Quadratic Formula

Polynomials and Polynomial Functions
- Polynomial Functions
- Polynomials and Linear Factors
- Dividing Polynomials
- Solving Polynomial Equations
- Theorems About Roots of Polynomial Equations
- The Fundamental Theorem of Algebra
- Permutations and Combinations
- The Binomial Theorem

Second Semester

Radical Functions and Rational Exponents
- Roots and Radical Expressions
- Multiplying and Dividing Radical Expressions
- Binomial Radical Expressions
- Rational Exponents
- Solving Square Root and Other Radical Equation
- Function Operations
- Inverse Relations and Functions
- Graphing Square Root and Other Radical Functions

Rational Functions
- Inverse Variation
- The Reciprocal Function Family
- Rational Functions and Their Graphs
- Rational Expressions
- Adding and Subtracting Rational Expressions
- Solving Rational Equations

Quadratic Relations and Conic Sections
- Parabolas
- Circles
- Ellipses
- Hyperbolas
- Translating Conic Sections

Sequences and Series
- Mathematical Patterns
- Arithmetic Sequences
- Geometric Sequences
- Arithmetic Series
- Geometric Series

Exponential and Logarithmic Functions
- Exploring Exponential Models
- Properties of Exponential Functions
- Logarithmic Functions as Inverses
- Properties of Logarithms
- Exponential and Logarithmic Equations
- Natural Logarithms

Periodic Functions and Trigonometry
- Exploring Periodic Data
- Angles and the Unit Circle
- Radian Measure
- The Sine Function
- The Cosine Function
- The Tangent Function
- Translating Sine and Cosine Functions
- Reciprocal Trigonometric Functions

Trigonometric Identities and Equations
- Trigonometric Identities
- Solving Trigonometric Equations Using Inverses
- Right Triangles and Trigonometric Ratios

Matrices
- Organizing Data Into Matrices
- Adding and Subtracting Matrices
- Matrix Multiplication