901 Algrbra2

1. Equations and Inequalities

- o   1.1 Linear Functions
- o   1.2 Quadratic Equations
- o   1.3 Complex Numbers; Quadratic Equations in the Complex Number System
- o   1.4 Radical Equations; Equations Quadratic in Form; Factorable Equations
- o   1.5 Solving Inequalities
- o   1.6 Equations and Inequalities Involving Absolute Value
- o   1.7 Problem Solving: Interest, Mixture, Uniform Motion, Constant Rate Job Applications

2. Graphs

- o   2.1 The Distance and Midpoint Formulas
- o   2.2 Graphs of Equations in Two Variables; Intercepts; Symmetry
- o   2.3 Lines
- o   2.4 Circles
- o   2.5 Variation

3. Functions and Their Graphs

- o   3.1 Functions
- o   3.2 The Graph of a Function
- o   3.3 Properties of Functions
- o   3.4 Library of Functions; Piecewise-defined Functions
- o   3.5 Graphing Techniques: Transformations
- o   3.6 Mathematical Models: Building Functions

4. Linear and Quadratic Functions

- o   4.1 Linear Functions and Their Properties
- o   4.2 Linear Models: Building Linear Functions from Data
- o   4.3 Quadratic Functions and Their Properties

o 4.4 Build Quadratic Models from Verbal Descriptions and from Data

o 4.5 Inequalities Involving Quadratic Functions

5. Polynomial and Rational Functions

o 5.1 Polynomial Functions and Models

o 5.2 Properties of Rational Functions

o 5.3 The Graph of a Rational Function

o 5.4 Polynomial and Rational Inequalities

o 5.5 The Real Zeros of a Polynomial Function

o 5.6 Complex Zeros; Fundamental Theorem of Algebra

6. Exponential and Logarithmic Functions

o 6.1 Composite Functions

o 6.2 One-to-One Functions; Inverse Functions

o 6.3 Exponential Functions

o 6.4 Logarithmic Functions

o 6.5 Properties of Logarithms

o 6.6 Logarithmic and Exponential Equations

o 6.7 Financial Models

o 6.8 Exponential Growth and Decay Models; Newton's Law; Logistic Growth and Decay Models

o 6.9 Building Exponential, Logarithmic, and Logistic Models from Data

7. Trigonometric Functions

o 7.1 Angles and Their Measure

o 7.2 Right Triangle Trigonometry

o 7.3 Computing the Values of Trigonometric Functions of Acute Angles

o 7.4 Trigonometric Functions of Any Angle

o 7.5 Unit Circle Approach; Properties of the Trigonometric Functions

o 7.6 Ciraphs of the Sine and Cosine Functions

o 7.7 Ciraphs of the Tangent, Ootangent, Oosecant, and Secant Functions

o 7.8 Phase Shift; Sinusoidal Curve Fitting