

23rd. August 2007

Course Outline-Algebra2.

1. Functions.

Definitions

Notation

Graphs

Solving Equations

Rewriting Formulas

Explicit and Recursive Formulas for sequences

2. Linear Functions

Constant Increase or Decrease Situations

The Graph of $y = ax + b$

Linear Combination Situation.

The Graph of $Ax + By = C$

Finding an Equation of a line

Fitting a line to Data

3. Quadratic Functions

Quadratic Expressions, Rectangles and Squares

Absolute Value, Square Root and Quadratic Equations

The Graph-Translation Theorem

Graphing $y = ax^2 + bx + c$

Completing the Square.

The Quadratic Formula

Imaginary Numbers

Complex Numbers

Analyzing Solutions to Quadratic Equations

4. Variation and Graphs.

Direct Variation

Inverse Variation

The Fundamental Theorem of Variation

The Graph of $y = kx$

Combined and Joint Variation

5. Powers

Power function

Properties of Powers

Negative Integer Exponents

Compound Interest

Positive Rational Exponents

Negative Rational Exponents

6. Matrices

Storing Data in Matrices

Addition of Matrices

Subtraction

Multiplication

Inequalities and compound Sentences

7. Systems

Solving Systems Using tables or graphs

Solving Systems by Substitution

Solving Systems Using Linear Combinations

Inverses of Matrices

Solving Systems Using Matrices

Graphing Inequalities in the Coordinate Plane

Systems of Linear Inequalities

Linear Programming 1

Linear Programming 2

8. Polynomials

Introduction to polynomials

Polynomials and Geometry

Factoring and Geometry

Factoring Special Cases

The Factor Theorem

Factoring Quadratic Trinomials and Related Polynomials