

Unit 1 – Linear Functions (Chapter 1)

- 1.1 Identifying Basic Parent Functions
- 1.2 Transformations of Linear and Absolute Value Functions
- 1.3 Modeling Linear Functions
- 1.4 Solving Linear Systems Algebraically and Graphically

Unit 2 – Quadratic Functions (Chapter 2)

- 2.2 Graphing Quadratic Functions
- 2.1 Symbolic Representations and Transformations of Quadratic Functions
- 2.4 Converting Intercept/Vertex/Standard Forms with Modeling
- 2.3 Focus of a Parabola with Modeling

Unit 3-Quadratic Equations and Complex Numbers (Chapter 3)

- 3.2 Complex Numbers (with a review of all factoring)
- 3.1 Solving Quadratic Equations
- 3.3 Solving Quadratic Equations with Completing the Square
- 3.4 Solving Quadratic Functions by Quadratic Formula
- 3.5 Quadratic-Linear Systems of Equations
- 3.6 Modeling with Quadratic Equations/Inequalities

Unit 4-Polynomial Functions (Chapter 4)

- 4.1 Graphs of Polynomial Functions (end behavior, max/min, domain/range, rates of change)
- 4.7 Transformations of Polynomials
- 4.2 Algebra of Polynomials through Combinations of Transformations
- 4.4 Sketching and Factoring Polynomials
- 4.3 Division of Polynomials (Long/Synthetic) and finding factors/zeros (Remainder Theorem)
- 4.6 Fundamental Theorem of Algebra
- 4.5 Finding Complex Roots of a Polynomial Equation
- 4.8 Even and Odd Functions
- 4.9 Modeling of Polynomials (finite differences/regression)

Unit 5-Rational Functions (Chapter 7)

- 7.2 Graphs of Basic Rational Functions (Transformations, Domain/Range, Asymptotes, Rate of Change)
- 7.3 Operations with Rational Expressions (Multiply/Divide)
- 7.4 Operations with Rational Expressions (Add/Subtract/Simplify Complex Fractions)
- 7.5 Modeling (Extraneous Roots and Work Problems)

Midterm

Unit 6-Rational Exponents and Radical Functions (Chapter 5)

- 5.3 Graphs of Basic Radical (Square Root and Cube) Functions
- 5.1 Nth Roots and Rational Exponents (solving equations as well)
- 5.6 Inverse of a Function (linear, quadratic, cubic, rational, square root) and restricted domains
- 5.2 Properties of Rational Exponents (simplifying expressions with variable in base)
- 5.4 Solving Radical Equations and Inequalities (Graphically and Algebraically) with Modeling
- 5.5 Performing Functional Operations (Notation and Multiple Representations)

Unit 7-Exponential and Logarithmic Functions (Chapter 6)

- 6.1 Exponential Growth and Decay Functions
- 6.4 Graphs of Basic Exponential Functions (Transformations, Domain/Range, Rates of Change)
- 6.2 Natural Base e (Continuous Growth and rewriting percent growth)
- 6.3 Logarithms and Logarithmic Functions (with Modeling Average Rate of Change)
- 6.5 Properties of Logarithms
- 6.6 Solving Exponential Equations (Newton's Laws of Heating and Cooling)
- 6.7 Modeling (Regression and common ratios)

Unit 8- Sequences and Series (Chapter 8)

- 8.1 Defining Sequences and Series (Function Notation, Subscript, Summation, Domain/Range)
- 8.5 Recursive Rules and Sequences
- 8.2 Arithmetic Sequences and Series (with Formulas and Modeling)
- 8.3 Geometric Sequences and Series (with Formulas and Modeling)

Unit 9 Trigonometric Ratios and Functions (Chapter 9)

- 9.1 Right Triangle Trigonometry (the 6 trig ratios)
- 9.2 Radian Measure and Angles (Arc length)
- 9.3 Unit Circle and Trig Functions of any angle
- 9.4 Graphs of Basic Trigonometric Functions (Sine/Cosine, Domain/Range, Max/Min, Period)
- 9.6 Modeling with Trigonometric Functions
- 9.7 Using Trigonometric Identities

Unit 10 Probability (Chapter 10)

- 10.1 Sample Spaces and Probability
- 10.2 Combined Events (Dependent and Independent Events)
- 10.3 Combined Events
- 10.4 Disjoint and Mutually Exclusive Events (Venn Diagrams and Two Way Tables)

Unit 11 Statistics (Chapter 11)

- 11.1 Measures of Center Spread (Normal Distribution and the 68-95-99 Rule)
- 11.2 Data Collection Techniques and using Simulation
- 11.3 Importance of Random Sampling and Bias
- 11.5 Margin of Error and Confidence Intervals
- 11.6 Making Inferences from Experiments