

Algebra 2 COURSE DESCRIPTION

Chapter 1 - First Degree Equations and Inequalities

- Lesson 1 - Expressions and Formulas
- Lesson 2 - Properties of Real Numbers
- Lesson 3 - Solving Equations
- Lesson 4 - Solving Absolute Value Equations
- Lesson 5 - Solving Inequalities
- Lesson 6 - Solving Compound and Absolute Value Inequalities

Chapter 2 - Linear Relations and Functions

- Lesson 1 - Relations and Functions
- Lesson 2 - Linear Equations
- Lesson 3 - Slope
- Lesson 4 - Writing Linear Equations
- Lesson 5 - Modeling Real-World Data: Using Scatter Plots
- Lesson 6 - Special Functions
- Lesson 7 - Graphing Inequalities

Chapter 3 - Systems of Equations and Inequalities

- Lesson 1 - Solving Systems of Equations by Graphing
- Lesson 2 - Solving Systems of Equations Algebraically
- Lesson 3 - Solving Systems of Inequalities by Graphing
- Lesson 4 - Linear Programming
- Lesson 5 - Solving Systems of Equations in Three Variables

Chapter 4 - Matrices

- Lesson 1 - Introduction to Matrices
- Lesson 2 - Operations with Matrices
- Lesson 3 - Multiplying Matrices
- Lesson 4 - Transformations with Matrices
- Lesson 5 - Determinants
- Lesson 6 - Cramer's Rule
- Lesson 7 - Identity and Inverse Matrices
- Lesson 8 - Using Matrices to Solve Systems of Equations

Chapter 5 - Polynomials

- Lesson 1 - Monomials
- Lesson 2 - Polynomials
- Lesson 3 - Dividing Polynomials
- Lesson 4 - Factoring Polynomials
- Lesson 5 - Roots of Real Numbers
- Lesson 6 - Radical Expressions
- Lesson 7 - Rational Exponents
- Lesson 8 - Radical Equations and Inequalities
- Lesson 9 - Complex Numbers

Chapter 6 - Quadratic Functions and Inequalities

- Lesson 1 - Graphing Quadratic Functions
- Lesson 2 - Solving Quadratic Equations by Graphing
- Lesson 3 - Solving Quadratic Equations by Factoring
- Lesson 4 - Completing the Square
- Lesson 5 - The Quadratic Formula and the Discriminant
- Lesson 6 - Analyzing Graphs of Quadratic Functions
- Lesson 7 - Graphing and Solving Quadratic Inequalities

Chapter 7 - Polynomial Functions

- Lesson 1 - Polynomial Functions
- Lesson 2 - Graphing Polynomial Functions
- Lesson 3 - Solving Equations Using Quadratic Techniques
- Lesson 4 - The Remainder and Factor Theorems
- Lesson 5 - Roots and Zeros
- Lesson 6 - Rational Zero Theorem
- Lesson 7 - Operations and Functions
- Lesson 8 - Inverse Functions and Relations
- Lesson 9 - Square Root Functions and Inequalities

Chapter 8 - Conic Sections

- Lesson 1 - Midpoint and Distance Formulas
- Lesson 2 - Parabolas
- Lesson 3 - Circles
- Lesson 4 - Ellipses
- Lesson 5 - Hyperbolas
- Lesson 6 - Conic Sections
- Lesson 7 - Solving Quadratic Systems

Chapter 9 - Rational Expressions and Equations

- Lesson 1 - Multiplying and Dividing Rational Expressions
- Lesson 2 - Adding and Subtracting Rational Expressions
- Lesson 3 - Graphing Rational Functions
- Lesson 4 - Direct, Joint, and Inverse Variation
- Lesson 5 - Classes of Functions
- Lesson 6 - Solving Rational Equations and Inequalities

Chapter 10 - Exponential and Logarithmic Relations

- Lesson 1 - Exponential Functions
- Lesson 2 - Logarithms and Logarithmic Functions
- Lesson 3 - Properties of Logarithms
- Lesson 4 - Common Logarithms Formula
- Lesson 5 - Base e and Natural Logarithms
- Lesson 6 - Exponential Growth and Decay

Chapter 11 - Sequences and Series

- Lesson 1 - Arithmetic Sequences
- Lesson 2 - Arithmetic Series
- Lesson 3 - Geometric Sequences
- Lesson 4 - Geometric Series
- Lesson 5 - Infinite Geometric Series
- Lesson 6 - Recursion and Special Sequences
- Lesson 7 - The Binomial Theorem
- Lesson 8 - Proof and Mathematical Induction

Chapter 12 - Probability and Statistics

- Lesson 1 - The Counting Principle
- Lesson 2 - Permutations and Combinations
- Lesson 3 - Probability
- Lesson 4 - Multiplying Probabilities
- Lesson 5 - Adding Probabilities
- Lesson 6 - Statistical Measures
- Lesson 7 - The Normal Distribution
- Lesson 8 - Binomial Experiments
- Lesson 9 - Sampling and Error

Chapter 13 - Trigonometric Functions

- Lesson 1 - Right Triangle Trigonometry
- Lesson 2 - Angles and Angle Measure
- Lesson 3 - Trigonometric Functions of General Angles
- Lesson 4 - Law of Sines
- Lesson 5 - Law of Cosines
- Lesson 6 - Circular Functions
- Lesson 7 - Inverse Trigonometric Functions

Chapter 14 - Trigonometric Graphs and Identities

- Lesson 1 - Graphing Trigonometric Functions
- Lesson 2 - Translations of Trigonometric Graphs
- Lesson 3 - Trigonometric Identities
- Lesson 4 - Verifying Trigonometric Identities
- Lesson 5 - Sum and Difference of Angles Formulas
- Lesson 6 - Double-Angle and Half-Angle Formulas
- Lesson 7 - Solving Trigonometric Equation