



Common Core Edition Table of Contents

ALGEBRA 1

Chapter 1 Foundations for Algebra

1-1 Variables and Expressions
1-2 Order of Operations and Evaluating Expressions
1-3 Real Numbers and the Number Line
1-4 Properties of Real Numbers
1-5 Adding and Subtracting Real Numbers
Concept Byte: Accuracy and Precision
1-6 Multiplying and Dividing Real Numbers
Concept Byte: Operations with Rational and Irrational Numbers
1-7 The Distributive Property
1-8 An Introduction to Equations
Concept Byte: Using Tables to Solve Equations
Review: Graphing in the Coordinate Plane
1-9 Patterns, Equations, and Graphs
Chapter Review
Chapter Test
Cumulative Test Prep

Chapter 2 Solving Equations

Concept Byte: Modeling One- Step Equations
2-1 Solving One-Step Equations
2-2 Solving Two-Step Equations
2-3 Solving Multi-Step Equations
Concept Byte: Modeling Equations With Variables on Both Sides
2-4 Solving Equations With Variables on Both Sides
2-5 Literal Equations and Formulas
2-6 Ratios, Rates, and Conversions
Concept Byte: Units
2-7 Solving Proportions
2-8 Proportions and Similar Figures
2-9 Percents
2-10 Change Expressed as a Percent
Chapter Review
Chapter Test
Cumulative Test Prep

Chapter 3 Solving Inequalities

3-1 Inequalities and Their Graphs
3-2 Solving Inequalities Using Addition or Subtraction
3-3 Solving Inequalities Using Multiplication or Division
Concept Byte: More Algebraic Properties
Concept Byte: Modeling Multi- Step Inequalities
3-4 Solving Multi-Step Inequalities
3-5 Working With Sets
3-6 Compound Inequalities
3-7 Absolute Value Equations and Inequalities
3-8 Unions and Intersections of Sets
Chapter Review
Chapter Test
Cumulative Test Prep

Chapter 4 An Introduction to Functions

4-1 Using Graphs to Relate Two Quantities
4-2 Patterns and Linear Functions
4-3 Patterns and Nonlinear Functions
4-4 Graphing a Function Rule
Concept Byte: Graphing Functions and Solving Equations
4-5 Writing a Function Rule
4-6 Formalizing Relations and Functions
4-7 Arithmetic Sequences
Chapter Review
Chapter Test
Cumulative Test Prep

Chapter 5 Linear Functions

5-1 Rate of Change and Slope
5-2 Direct Variation
Concept Byte: Investigating $y = mx + b$
5-3 Slope-Intercept Form
5-4 Point-Slope Form
5-5 Standard Form
5-6 Parallel and Perpendicular Lines
Concept Byte: Inverse of Linear Functions
5-7 Scatter Plots and Trend Lines
Concept Byte: Using Residuals
5-8 Graphing Absolute Value Functions
Concept Byte: Characteristics of Absolute Value Graphs
Chapter Review
Chapter Test
Cumulative Test Prep

**Please contact your Pearson Sales Representative
for more information on the High School program**

ALGEBRA 1 continued**Chapter 6 Systems of Equations and Inequalities**

6-1 Solving Systems by Graphing
 Concept Byte: Solving Systems
 Concept Byte: Solving Systems Using Algebra Tiles
 6-2 Solving Systems Using Substitution
 6-3 Solving Systems Using Elimination
 Concept Byte: Matrices and Solving Systems
 6-4 Applications of Linear Systems
 6-5 Linear Inequalities
 6-6 Systems of Linear Inequalities
 Concept Byte: Graphing Linear Inequalities
 Chapter Review
 Chapter Test
 Cumulative Test Prep

Chapter 7 Exponents and Exponential Functions Equations

Concept Byte: Exponents
 7-1 Integer Exponents
 Concept Byte: Exploring Rational Exponents and Radicals
 7-2 Radicals and Rational Expressions
 7-3 Exponential Functions
 7-4 Exponential Growth and Decay
 7-5 Geometric Sequence
 Chapter Review
 Chapter Test
 Cumulative Test Prep

Chapter 8 Polynomials and Factoring

8-1 Adding and Subtracting Polynomials
 8-2 Multiplying and Factoring
 Concept Byte: Using Models to Multiply Polynomials
 8-3 Multiplying Binomials
 8-4 Multiplying Special Cases
 Concept Byte: Using Models to Factor
 8-5 Factoring $x^2 + bx + c$
 8-6 Factoring $ax^2 + bx + c$
 8-7 Factoring Special Cases
 8-8 Factoring by Grouping
 Chapter Review
 Chapter Test
 Cumulative Test Prep

Chapter 9 Quadratic Functions and Equations

9-1 Quadratic Graphs and Their Properties
 9-2 Quadratic Functions
 9-3 Solving Quadratic Equations
 Concept Byte: Finding Roots
 9-4 Factoring to Solve Quadratic Equations
 9-5 Completing the Square
 9-6 The Quadratic Formula and the Discriminant
 9-7 Linear, Quadratic, and Exponential Models
 Concept Byte: Performing Regressions
 9-8 Systems of Linear and Quadratic Equations
 Chapter Review
 Chapter Test
 Cumulative Test Prep

Chapter 10 Radical Expressions and Equations

10-1 The Pythagorean Theorem
 Concept Byte: Distance and Midpoint Formulas
 10-2 Simplifying Radicals
 10-3 Operations with Radical Expressions
 10-4 Solving Radical Equations
 10-5 Graphing Square Root Functions
 Concept Byte: Right Triangle Ratios
 10-6 Trigonometric Ratios
 Chapter Review
 Chapter Test
 Cumulative Test Prep

Chapter 11 Rational Expressions and Functions

11-1 Simplifying Rational Expressions
 11-2 Multiplying and Dividing Rational Expressions
 11-3 Dividing Polynomials
 11-4 Adding and Subtracting Rational Expressions
 11-5 Solving Rational Equations
 11-6 Inverse Variation
 11-7 Graphing Rational Functions
 Concept Byte: Graphing Rational Functions
 Chapter Review
 Chapter Test
 Cumulative Test Prep

Chapter 12 Data analysis and Probability

12-1 Organizing Data Using Matrices
 12-2 Frequency and Histograms
 12-3 Measures of Central Tendency and Dispersion
 Concept Byte: Standard Deviation
 12-4 Box-and-Whisker Plots
 Concept Byte: Designing our Own Survey
 12-5 Samples and Surveys
 Concept Byte: Two-Way Frequency Tables
 12-6 Permutations and Combinations
 12-7 Theoretical and Experimental Probability
 Concept Byte: Conducting Simulations
 12-8 Probability of Compound Events
 Concept Byte: Conditional Probability
 Chapter Review
 Chapter Test
 End of Course Test

GEOMETRY**Chapter 1 Tools of Geometry**

1-1 Nets and Drawings for Visualizing Geometry
1-2 Points, Lines, and Planes
1-3 Measuring Segments
1-4 Measuring Angles
1-5 Exploring Angle Pairs
Concept Byte: Compass Designs
1-6 Basic Constructions
Concept Byte: Exploring Constructions
1-7 Midpoint and Distance in the Coordinate Plane
Review: Classifying Polygons
1-8 Perimeter, Circumference, and Area
Concept Byte: Comparing Perimeters and Areas
Chapter Review
Chapter Test
Cumulative Test Prep

Chapter 2 Reasoning and Proof

2-1 Patterns and Inductive Reasoning
2-2 Conditional Statements
Concept Byte: Logic and Truth Tables
2-3 Biconditionals and Definitions
2-4 Deductive Reasoning
2-5 Reasoning in Algebra and Geometry
2-6 Proving Angles Congruent
Chapter Review
Chapter Test
Cumulative Test Prep

Chapter 3 Parallel and Perpendicular Lines

3-1 Lines and Angles
Concept Byte: Parallel Lines and Related Angles
3-2 Properties of Parallel Lines
3-3 Proving Lines Parallel
3-4 Parallel and Perpendicular Lines
Concept Byte: Perpendicular Lines and Planes
3-5 Parallel Lines and Triangles
Concept Byte: Exploring Spherical Geometry
3-6 Constructing Parallel and Perpendicular Lines
3-7 Equations of Lines in the Coordinate Plane
3-8 Slopes of Parallel and Perpendicular Lines
Chapter Review
Chapter Test
Cumulative Test Prep

Chapter 4 Congruent Triangles

4-1 Congruent Figures
Concept Byte: Building Congruent Triangles
4-2 Triangle Congruence by SSS and SAS
4-3 Triangle Congruence by ASA and AAS
Concept Byte: Exploring AAA and SSA
4-4 Using Corresponding Parts of Congruent Triangles
Concept Byte: Paper-Folding Conjectures
4-5 Isosceles and Equilateral Triangles
4-6 Congruence in Right Triangles
4-7 Congruence in Overlapping Triangles
Algebra Review: Systems of Linear Equations
Chapter Review
Chapter Test
Cumulative Test Prep

Chapter 5 Relationships Within Triangles

Concept Byte: Investigating Midsegments
5-1 Midsegments of Triangles
5-2 Perpendicular and Angle Bisectors
Concept Byte: Paper Folding Bisectors
5-3 Bisectors in Triangles
Concept Byte: Special Segments in Triangles
5-4 Medians and Altitudes
5-5 Indirect Proof Extends
Algebra Review: Solving Inequalities
5-6 Inequalities in One Triangle
5-7 Inequalities in Two Triangles
Chapter Review
Chapter Test
Cumulative Test Prep

Chapter 6 Polygons and Quadrilaterals

Concept Byte: Exterior Angles of Polygons
6-1 The Polygon-Angle Sum Theorems
6-2 Properties of Parallelograms
6-3 Proving That a Quadrilateral Is a Parallelogram
6-4 Properties of Rhombuses, Rectangles, and Squares
6-5 Conditions for Rhombuses, Rectangles, and Squares
6-6 Trapezoids and Kites
Algebra Review: Simplifying Radicals
6-7 Polygons in the Coordinate Plane
6-8 Applying Coordinate Geometry
Concept Byte: Quadrilaterals in Quadrilaterals
6-9 Proofs Using Coordinate Geometry
Chapter Review
Chapter Test
Cumulative Test Prep

GEOMETRY continued**Chapter 7 Similarity**

7-1 Ratios and Proportions Algebra Review: Solving Quadratic Equations
 7-2 Similar Polygons
 Concept Byte: Fractals
 7-3 Proving Triangles Similar
 7-4 Similarity in Right Triangles
 Concept Byte: The Golden Ratio Extends
 Concept Byte: Exploring Proportions in Triangles
 7-5 Proportions in Triangles
 Chapter Review
 Chapter Test
 Cumulative Test Prep

Chapter 8 Right Triangles and Trigonometry

Concept Byte: The Pythagorean Theorem
 8-1 The Pythagorean Theorem and Its Converse
 8-2 Special Right Triangles
 Concept Byte: Exploring Trigonometric Ratios
 8-3 Trigonometry
 Concept Byte: Measuring From
 8-4 Angles of Elevation and Depression
 8-5 Laws of Sines and Cosines
 Chapter Review
 Chapter Test
 Cumulative Test Prep

Chapter 9 Transformations

Concept Byte: Tracing Paper Transformations
 9-1 Translations
 Concept Byte: Paper Folding and Reflections
 9-2 Reflections
 9-3 Rotations
 Concept Byte: Symmetry
 9-4 Compositions of
 9-5 Triangle Congruence
 9-6 Dilations
 9-7 Similarity
 Chapter Review
 Chapter Test
 Cumulative Test Prep

Chapter 10 Area

Review: Developing Formulas for Area
 10-1 Areas of Parallelograms and Triangles
 10-2 Areas of Trapezoids, Rhombuses, and Kites
 10-3 Areas of Regular Polygons
 10-4 Perimeters and Areas of Similar Figures
 10-5 Trigonometry and Area
 10-6 Circles and Arcs
 Concept Byte: Circle Graphs Applies
 Concept Byte: Exploring the Area of a Circle
 10-7 Areas of Circles and Sectors
 Concept Byte: Exploring Area and Circumference
 10-8 Geometric Probability
 Chapter Review
 Chapter Test
 Cumulative Test

Chapter 11 Surface Area and Volume

11-1 Space Figures and Cross Sections
 Concept Byte: Perspective Drawing
 Concept Byte: Literal Equations
 11-2 Surface Areas of Prisms and Cylinders
 11-3 Surface Areas of Pyramids and Cones
 11-4 Volumes of Prisms and Cylinders
 Concept Byte: Finding Volume
 11-5 Volumes of Pyramids and Cones
 11-6 Surface Area and Volume of Spheres
 Concept Byte: Exploring Similar Solids
 11-7 Areas and Volumes of Similar Solids
 Chapter Review
 Chapter Test
 Cumulative Test Prep

Chapter 12 Circles

12-1 Tangent Lines
 Concept Byte: Paper Folding With Circles
 12-2 Chords and Arcs
 12-3 Inscribed Angles
 Concept Byte: Exploring Chords and Secants
 12-4 Angle Measures and Segment lengths
 12-5 Circles in the Coordinate Plane
 Concept Byte: Equation of a Parabola
 12-6 Locus: A Set of Points
 Chapter Review
 Chapter Test
 Cumulative Test Prep

Chapter 13: Probability

13-1 Theoretical and Experimental Probability
 13-2 Probability Distribution and Frequency Tables
 13-3 Permutations and Combinations
 13-4 Compound Probability and Probability of Multiple Events
 13-5 Contingency Tables
 13-6 Conditional Probability
 13-7 Modeling Randomness
 Concept Byte: Probability and Decision Making
 Chapter Review
 Chapter Test
 End of Course Test

ALGEBRA 2

Chapter 1 Expressions, Equations, and Inequalities

1-1 Patterns and Expressions
1-2 Properties of Real Numbers
1-3 Algebraic Expressions
1-4 Solving Equations
1-5 Solving Inequalities
1-6 Absolute Value Equations and Inequalities
Chapter Review
Chapter Test
Cumulative Test Prep

Chapter 2 Functions, Equations, and Graphs

2-1 Relations and Functions
2-2 Direct Variation
2-3 Linear Functions and Slope- Intercept Form
2-4 More About Linear Equations
Concept Byte: Piecewise Functions
2-5 Using Linear Models
2-6 Families of Functions
2-7 Absolute Value Functions and Graphs
2-8 Two-Variable Inequalities
Chapter Review
Chapter Test
Cumulative Test Prep

Chapter 3 Linear Systems

3-1 Solving Systems Using Tables and Graphs
3-2 Solving Systems Algebraically
3-3 Systems of Inequalities
3-4 Linear Programming
Concept Byte: Linear Programming
Concept Byte: Graphs in Three Dimensions
3-5 Systems With Three Variables
3-6 Solving Systems Using Matrices
Chapter Review
Chapter Test
Cumulative Test Prep

Chapter 4 Quadratic Functions and Equations

4-1 Quadratic Functions and Transformations
4-2 Standard Form of a Quadratic Function
4-3 Modeling With Quadratic Functions
Concept Byte: Identifying Quadratic Data
4-4 Factoring Quadratic Expressions
Algebra Review: Square Roots and Radicals
4-5 Quadratic Equations
Concept Byte: Writing Equations From Roots
4-6 Completing the Square
4-7 The Quadratic Formula
4-8 Complex Numbers
Concept Byte: Quadratic Inequalities
4-9 Quadratic Systems
Concept Byte: Powers of Complex Numbers
Chapter Review
Chapter Test
Cumulative Test Prep

Chapter 5 Polynomials and Polynomial Functions

5-1 Polynomial
5-2 Polynomials, Linear Factors, and Zeros
5-3 Solving Polynomial Equations
5-4 Dividing
5-5 Theorems About Roots of Polynomial Equations
Concept Byte: Polynomial Identities
5-6 The Fundamental Theorem of Algebra
Concept Byte: Graphs of Polynomials
5-7 The Binomial Theorem
5-8 Polynomial Models in the Real World
5-9 Transforming Polynomial Functions
Chapter Review
Chapter Test
Cumulative Test Prep

Chapter 6 Radical Functions and Rational Exponents

Algebra Review: Properties of Exponents
6-1 Roots and Radical Expressions
6-2 Multiplying and Dividing Radical Expressions
6-3 Binomial Radical Expressions
6-4 Rational Exponents
6-5 Solving Square Root and Other Radical Equations
6-6 Function Operations
6-7 Inverse Relations and Functions
Concept Byte: Graphing Inverses
6-8 Graphing Radical Functions
Chapter Review
Chapter Test
Cumulative Test Prep

Chapter 7 Exponential and Logarithmic Functions

7-1 Exploring Exponential Models
7-2 Properties of Exponential Functions
7-3 Logarithmic Functions as Inverses
Concept Byte: Fitting Curves to Data
7-4 Properties of Logarithms
7-5 Exponential and Logarithmic Equations
Concept Byte: Using Logarithms for Exponential Models
7-6 Natural Logarithms
Concept Byte: Exponential and Logarithmic Inequalities
Chapter Review
Chapter Test
Cumulative Test Prep

ALGEBRA 2 continued**Chapter 8 Rational Functions**

8-1 Inverse Variation
 Concept Byte: Graphing Rational Functions
 8-2 The Reciprocal Function Family
 8-3 Rational Functions and Their Graphs
 Concept Byte: Oblique Asymptotes
 8-4 Rational Expressions
 8-5 Adding and Subtracting Rational Expressions
 8-6 Solving Rational Equations
 Concept Byte: Systems with Rational Equations
 Concept Byte: Rational Inequalities
 Chapter Review
 Chapter Test
 Cumulative Test Prep

Chapter 9 Sequences and Series

9-1 Mathematical Patterns
 9-2 Arithmetic Sequences
 Concept Byte: The Fibonacci Sequence
 9-3 Geometric Sequences
 9-4 Arithmetic Series
 Concept Byte: Geometry and Infinite Series
 9-5 Geometric Series
 Chapter Review
 Chapter Test
 Cumulative Test Prep

Chapter 10 Quadratic Relations and Conic Sections

10-1 Exploring Conic Sections
 Concept Byte: Graphing Conic Section
 10-2 Parabolas
 10-3 Circles
 10-4 Ellipses
 10-5 Hyperbolas
 10-6 Translating Conic Sections
 Solving Quadratic
 Chapter Review
 Chapter Test
 Cumulative Test Prep

Chapter 11 Probability and Statistics

11-1 Permutations and Combinations
 11-2 Probability
 11-3 Probability Multiple Events
 Concept Byte: Probability Distributions
 11-4 Conditional Probability
 11-5 Probability Models
 11-6 Analyzing Data
 11-7 Standard Deviation
 11-8 Samples and Surveys
 Concept Byte: Population Mean
 11-9 Binomial Distributions
 Concept Byte: Approximating a Binomial Distribution
 11-10 Normal Distributions
 Concept Byte: Randomized Experiments
 Chapter Review
 Chapter Test
 Cumulative Test Prep

Chapter 12 Matrices

12-1 Adding and Subtracting
 Concept Byte: Working With Matrices
 12-2 Matrix
 Concept Byte: Networks
 12-3 Determinants and Inverses
 12-4 Inverse Matrices and Systems
 12-5 Geometric Transformations
 12-6 Vectors
 Chapter Review
 Chapter Test
 Cumulative Test Prep

Chapter 13 Periodic Functions and Trigonometry

13-1 Exploring Periodic Data
 Geometry Review: Special Right Triangles
 13-2 Angles and the Unit Circle
 Activity Lab: Measuring Radians
 13-3 Radian Measure
 13-4 The Sine Function
 Concept Byte: Graphing Trigonometric Functions
 13-5 The Cosine Function
 13-6 The Tangent Function
 13-7 Translating Sine and Cosine Functions
 13-8 Reciprocal Trigonometric Functions
 Chapter Review
 Chapter Test
 Cumulative Test Prep

Chapter 14 Periodic Functions and Trigonometry

14-1 Trigonometric Identities
 14-2 Solving Trigonometric Equations Using Inverses
 14-3 Right Triangles and Trigonometric Ratios
 14-4 Area and the Law of Sines
 Concept Byte: The Ambiguous Case
 14-5 The Law of Cosines
 14-6 Angle Identities
 14-7 Double-Angle and Half-Angle Identities
 End of Course Test