



DREYFOUS & ASSOCIATES

Course Overview

Pre-Algebra

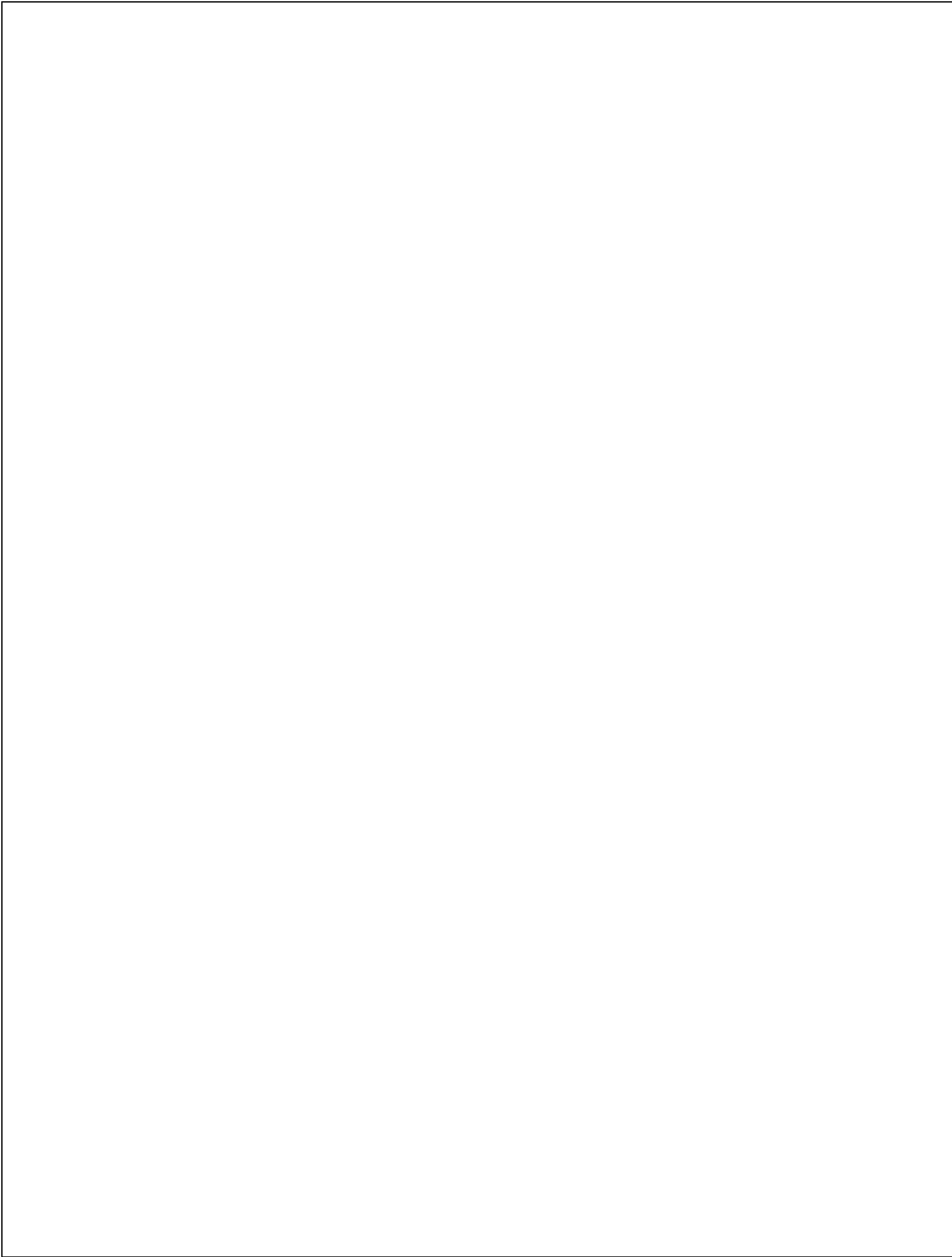
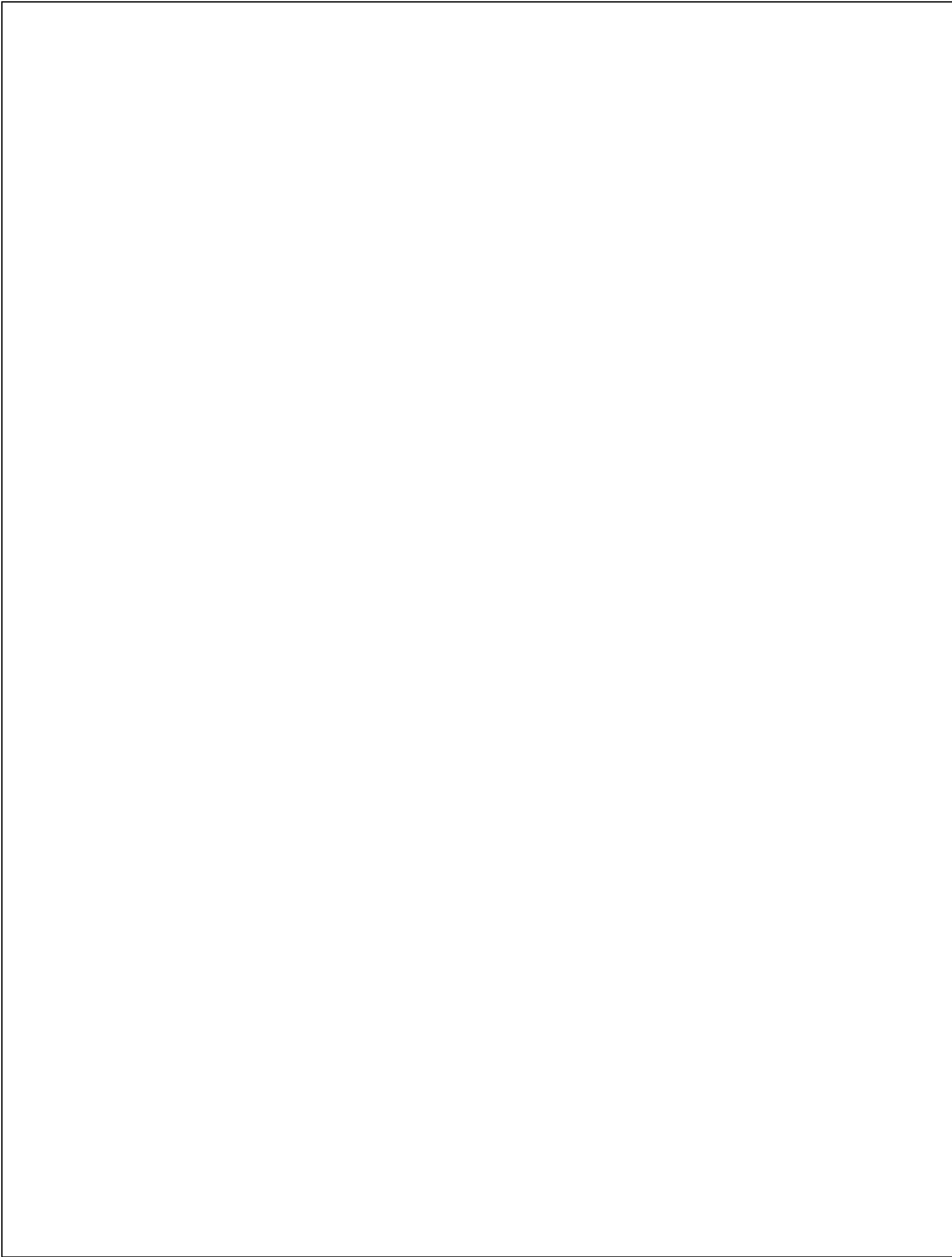


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Breakdown of Units

The Pre-Algebra course consists of fourteen units. Each unit is composed of lessons, each of which includes a presentation divided into sections that develop the subject matter that will be studied. Each lesson also includes worksheets and generally includes video and internet links.

Below is an itemization of the division of each unit in lessons, including a detailed description of the general objectives and the name of each lesson with its corresponding objectives, concepts, and skills.

Unit 0. Start Smart: Preparing for Pre-Algebra

At the end of this unit the student will have completed the objectives found in the following lessons.

General Objectives

- Use the four-step plan to solve problems.
- Add, subtract, multiply, and divide decimals.
- Write a verbal rule to represent a pattern or sequence.

Lesson 0. Start Smart: Preparing for Pre-Algebra

Code: C312G0SU00L00

Unit Documents: Get Started, Posttest and Pretest.

Lesson 1. A Plan for Problem Solving

Code: C312G0SU00L01

Objective

- Use the four-step plan to solve problems.

Lesson 2. Problem-Solving Strategies

Code: C312G0SU00L02

Objectives

- Use problem-solving strategies to solve nonroutine problems.
- Select an appropriate strategy.

Concepts

- guess and check
- look for a pattern
- make a table
- work backward

Lesson 3. Number and Operations**Code:** C312G0SU00L03**Objectives**

- Add and subtract decimals.
- Multiply and divide decimals.

Concepts

- annex
- decimal

Lesson 4. Algebra**Code:** C312G0SU00L04**Objectives**

- Write a verbal rule to represent a pattern or sequence.
- Find any term value in a pattern or sequence.

Lesson 5. Geometry**Code:** C312G0SU00L05**Objectives**

- Find the perimeter of a figure.
- Measure sides of figures to find the perimeter.

Lesson 6. Measurement**Code:** C312G0SU00L06**Objectives**

- Convert within measurement systems.
- Estimate and measure objects.

Concepts

- customary system
- metric system

Lesson 7. Data Analysis**Code:** C312G0SU00L07**Objectives**

- Read and interpret pictographs, line graphs, and bar graphs.
- Make pictographs, line graphs, and bar graphs.

Concepts

- bar graph
- data
- line graph
- pictograph

Unit 1. The Tools of Algebra

At the end of this unit the student will have completed the objectives found in the following lessons.

General Objectives

- Translate verbal phrases into numerical expressions.
- Evaluate expressions and use the order of operations.
- Identify and use properties of addition and multiplication.
- Use words, tables, equations, and graphs to represent relations and functions.

Lesson 0. The Tools of Algebra

Code: C312G0SU01L00

Unit Documents: Get Ready, Key Concepts, Mid Unit Quiz, Mixed Problem Solving, Practice Test, Preparing for Standardized Tests, Standardized Test Practice and Study Guide and Review.

Lesson 1. Words and Expressions

Code: C312G0SU01L01

Objectives

- Translate verbal phrases into numerical expressions.
- Use the order of operations to evaluate expressions.

Concepts

- evaluate
- numerical expression
- order of operations

Lesson 2. Variables and Expressions

Code: C312G0SU01L02

Objectives

- Translate verbal phrases into algebraic expressions.
- Evaluate expressions containing variables.

Concepts

- algebra
- algebraic expression
- defining a variable
- variable

Lesson 3. Properties

Code: C312G0SU01L03

Objectives

- Identify and use properties of addition and multiplication.
- Use properties to simplify algebraic expressions.

Concepts

- counterexample
- deductive reasoning
- properties
- simplify

Lesson 4. Ordered Pairs and Relations

Code: C312G0SU01L04

Objectives

- Use ordered pairs to locate points.
- Use graphs to represent relations.

Concepts

- coordinate plane
- coordinate system
- domain
- graph
- ordered pair
- origin
- range
- relation
- x -axis
- x -coordinate
- y -axis
- y -coordinate

Lesson 5. Words, Equations, Tables, and Graphs

Code: C312G0SU01L05

Objectives

- Use multiple representations to represent functions.
- Translate among different verbal, tabular, graphical, and algebraic representations of functions.

Concepts

- equation
- function
- function rule
- function table

Lesson 6. Scatter Plots

Code: C312G0SU01L06

Objectives

- Construct scatter plots.
- Analyze trends in scatter plots.

Concepts

- scatter plot

Unit 2. Operations with Integers

At the end of this unit the student will have completed the objectives found in the following lessons.

General Objectives

- Compare, order, add, subtract, multiply and divide integers.
- Graph points and algebraic relationships on a coordinate plane.
- Define, identify, and draw transformations.

Lesson 0. Operations with Integers

Code: C312G0SU02L00

Unit Documents: Get Ready, Key Concepts, Mid Unit Quiz, Mixed Problem Solving, Practice Test, Preparing for Standardized Tests, Standardized Test Practice and Study Guide and Review.

Lesson 1. Integers and Absolute Value

Code: C312G0SU02L01

Objectives

- Compare and order integers.
- Find the absolute value of an expression.

Concepts

- absolute value
- coordinate
- inequality
- integers
- negative numbers
- positive numbers

Lesson 2. Adding Integers

Code: C312G0SU02L02

Objectives

- Add two integers.
- Add more than two integers.

Concepts

- additive inverse
- opposites

Lesson 3. Subtracting Integers

Code: C312G0SU02L03

Objectives

- Subtract integers.
- Evaluate expressions containing variables.

Lesson 4. Multiplying Integers**Code:** C312G0SU02L04**Objectives**

- Multiply integers.
- Simplify algebraic expressions.

Lesson 5. Dividing Integers**Code:** C312G0SU02L05**Objectives**

- Divide integers.
- Find the mean (average) of a set of data.

Concept

- mean

Lesson 6. Graphing in Four Quadrants**Code:** C312G0SU02L06**Objectives**

- Graph points on a coordinate plane.
- Graph algebraic relationships.

Concept

- quadrants

Lesson 7. Translations and Reflections on the Coordinate Plane**Code:** C312G0SU02L07**Objectives**

- Define and identify transformations.
- Draw translations and reflections on a coordinate plane.

Unit 3. Operations with Rational Numbers

At the end of this unit the student will have completed the objectives found in the following lessons.

General Objectives

- Write fractions as terminating or repeating decimals.
- Identify, add, subtract, multiply, and divide rational numbers.
- Evaluate algebraic expressions with fractions.

Lesson 0. Operations with Rational Numbers

Code: C312G0SU03L00

Unit Documents: Get Ready, Key Concepts, Mid Unit Quiz, Mixed Problem Solving, Practice Test, Preparing for Standardized Tests, Standardized Test Practice and Study Guide and Review.

Lesson 1. Fractions and Decimals

Code: C312G0SU03L01

Objectives

- Write fractions as terminating or repeating decimals.
- Compare fractions and decimals.

Concepts

- bar notation
- repeating decimal
- terminating decimal

Lesson 2. Rational Numbers

Code: C312G0SU03L02

Objectives

- Write rational numbers as fractions.
- Identify and classify rational numbers.

Concept

- rational numbers

Lesson 3. Multiplying Rational Numbers

Code: C312G0SU03L03

Objectives

- Multiply positive and negative fractions.
- Evaluate algebraic expressions with fractions.

Lesson 4. Dividing Rational Numbers

Code: C312G0SU03L04

Objectives

- Divide positive and negative fractions using multiplicative inverses.

- Divide algebraic fractions.

Concepts

- multiplicative inverse
- reciprocal

Lesson 5. Adding and Subtracting Like Fractions

Code: C312G0SU03L05

Objectives

- Add rational numbers with common denominators.
- Subtract rational numbers with common denominators.

Concept

- like fractions

Lesson 6. Adding and Subtracting Unlike Fractions

Code: C312G0SU03L06

Objectives

- Add unlike fractions.
- Subtract unlike fractions.

Concept

- unlike fractions

Unit 4. Expressions and Equations

At the end of this unit the student will have completed the objectives found in the following lessons.

General Objectives

- Use the Distributive Property.
- Solve equations by using properties of equality.
- Write equations to solve problems.

Lesson 0. Expressions and Equations

Code: C312G0SU04L00

Unit Documents: Get Ready, Key Concepts, Mid Unit Quiz, Mixed Problem Solving, Practice Test, Preparing for Standardized Tests, Standardized Test Practice and Study Guide and Review.

Lesson 1. The Distributive Property

Code: C312G0SU04L01

Objectives

- Use the Distributive Property to write equivalent numerical expressions.
- Use the Distributive Property to write equivalent algebraic expressions.

Concepts

- Distributive Property
- equivalent expressions

Lesson 2. Simplifying Algebraic Expressions

Code: C312G0SU04L02

Objectives

- Identify parts of an algebraic expression.
- Use the Distributive Property to simplify algebraic expressions.

Concepts

- coefficient
- constant
- like terms
- simplest form
- simplifying the expression

Lesson 3. Solving Equations by Adding or Subtracting

Code: C312G0SU04L03

Objectives

- Solve equations by using the Addition and Subtraction Properties of Equality.
- Translate verbal sentences into equations.

Concepts

- equation

- equivalent
- inverse operation
- solution
- solving the equation

Lesson 4. Solving Equations by Multiplying or Dividing

Code: C312G0SU04L04

Objectives

- Solve equations by using the Division Property of Equality.
- Solve equations by using the Multiplication Property of Equality.

Lesson 5. Solving Two-Step Equations

Code: C312G0SU04L05

Objectives

- Solve two-step equations.
- Solve real-world problems involving two-step equations.

Concept

- two-step equation

Lesson 6. Writing Equations

Code: C312G0SU04L06

Objectives

- Write two-step equations.
- Solve verbal problems by writing and solving two-step equations.

Unit 5. Multi-Step Equations and Inequalities

At the end of this unit the student will have completed the objectives found in the following lessons.

General Objectives

- Use the Distributive Property to solve equations and inequalities.
- Select and use appropriate operations to solve problems and justify solutions.

Lesson 0. Multi-Step Equations and Inequalities

Code: C312G0SU05L00

Unit Documents: Get Ready, Key Concepts, Mid Unit Quiz, Mixed Problem Solving, Practice Test, Preparing for Standardized Tests, Standardized Test Practice and Study Guide and Review.

Lesson 1. Perimeter and Area

Code: C312G0SU05L01

Objectives

- Solve problems involving the perimeters of triangles and rectangles.
- Solve problems involving the areas of triangles and rectangles.

Concepts

- area
- formula
- perimeter

Lesson 2. Solving Equations with Variables on Each Side

Code: C312G0SU05L02

Objectives

- Solve equations with variables on each side.
- Solve equations that involve grouping symbols.

Lesson 3. Inequalities

Code: C312G0SU05L03

Objectives

- Write inequalities.
- Graph inequalities on a number line.

Concept

- inequality

Lesson 4. Solving Inequalities

Code: C312G0SU05L04

Objectives

- Solve inequalities by using the Addition and Subtraction Properties of Inequality.

- Solve inequalities by multiplying or dividing by a positive or negative number.

Lesson 5. Solving Multi-Step Equations and Inequalities

Code: C312G0SU05L05

Objectives

- Solve multi-step equations.
- Solve multi-step inequalities.

Concepts

- identity
- null or empty set

Unit 6. Ratio, Proportion, and Similar Figures

At the end of this unit the student will have completed the objectives found in the following lessons.

General Objectives

- Write ratios as fractions in simplest form.
- Find and compare unit rates.
- Use and solve proportions.

Lesson 0. Ratio, Proportion, and Similar Figures

Code: C312G0SU06L00

Unit Documents: Get Ready, Key Concepts, Mid Unit Quiz, Mixed Problem Solving, Practice Test, Preparing for Standardized Tests, Standardized Test Practice and Study Guide and Review.

Lesson 1. Ratios

Code: C312G0SU06L01

Objectives

- Write ratios as fractions in simplest form.
- Simplify ratios involving measurements.

Concepts

- ratio

Lesson 2. Unit Rates

Code: C312G0SU06L02

Objectives

- Find unit rates.
- Compare and use unit rates to solve problems.

Concepts

- rate
- unit rate

Lesson 3. Converting Rates and Measurements

Code: C312G0SU06L03

Objectives

- Convert rates using dimensional analysis.
- Convert between systems of measurement.

Concept

- dimensional analysis

Lesson 4. Proportional and Nonproportional Relationships

Code: C312G0SU06L04

Objectives

- Identify proportional and nonproportional relationships in tables and graphs.
- Describe a proportional relationship using an equation.

Concepts

- constant of proportionality
- nonproportional
- proportional

Lesson 5. Solving Proportions

Code: C312G0SU06L05

Objectives

- Solve proportions.
- Use proportions to solve real-world problems.

Concepts

- cross products
- proportion

Lesson 6. Scale Drawings and Models

Code: C312G0SU06L06

Objectives

- Use scale drawings.
- Construct scale drawings.

Concepts

- scale
- scale drawing
- scale factor
- scale model

Lesson 7. Similar Figures

Code: C312G0SU06L07

Objectives

- Find missing measures of similar figures.
- Use scale factors to solve problems.

Concepts

- congruent
- corresponding parts
- similar figures

Lesson 8. Dilations**Code:** C312G0SU06L08**Objectives**

- Graph dilations on a coordinate plane.
- Find the scale factor of a dilation.

Concept

- dilation

Lesson 9. Indirect Measurement**Code:** C312G0SU06L09**Objectives**

- Solve problems involving indirect measurement using shadow reckoning.
- Solve problems using surveying methods.

Concept

- indirect measurement

Unit 7. Percent

At the end of this unit the student will have completed the objectives found in the following lessons.

General Objectives

- Express percents as fractions and decimals, and fractions and percents.
- Use the percent proportion and percent equations to solve problems.
- Construct and interpret circle graphs.

Lesson 0. Percent

Code: C312G0SU07L00

Unit Documents: Get Ready, Key Concepts, Mid Unit Quiz, Mixed Problem Solving, Practice Test, Preparing for Standardized Tests, Standardized Test Practice and Study Guide and Review.

Lesson 1. Fractions and Percents

Code: C312G0SU07L01

Objectives

- Express percents as fractions.
- Express fractions as percents.

Concept

- percent

Lesson 2. Fractions, Decimals, and Percents

Code: C312G0SU07L02

Objectives

- Express percents as decimals and decimals as percents.
- Compare and order fractions, decimals, and percents.

Lesson 3. Using the Percent Proportion

Code: C312G0SU07L03

Objectives

- Use the percent proportion to solve problems.
- Apply the percent proportion to real-world problems.

Concept

- percent proportion

Lesson 4. Find Percent of a Number Mentally

Code: C312G0SU07L04

Objectives

- Compute mentally with percents.
- Estimate with percents.

Lesson 5. Using Percent Equations**Code:** C312G0SU07L05**Objectives**

- Solve percent problems using percent equations.
- Apply the percent equation to real-world problems.

Concept

- percent equation

Lesson 6. Percent of Change**Code:** C312G0SU07L06**Objectives**

- Find percent of increase and decrease.
- Solve real-world problems involving markup and discount.

Concepts

- discount
- markup
- percent of change
- percent of decrease
- percent of increase
- selling price

Lesson 7. Simple and Compound Interest**Code:** C312G0SU07L07**Objectives**

- Solve simple interest problems and apply the simple interest equation to real-world problems.
- Solve compound interest problems.

Concepts

- compound interest
- interest
- principal
- simple interest

Lesson 8. Circle Graphs**Code:** C312G0SU07L08**Objectives**

- Construct circle graphs.
- Analyze circle graphs to solve real-world problems.

Concept

- circle graph

Unit 8. Linear Functions and Graphing

At the end of this unit the student will have completed the objectives found in the following lessons.

General Objectives

- Solve and graph linear equations with two variables.
- Write and graph linear equations using the slope and y-intercept.
- Solve systems of equations by graphing and substitution.

Lesson 0. Linear Functions and Graphing

Code: C312G0SU08L00

Unit Documents: Get Ready, Key Concepts, Mid Unit Quiz, Mixed Problem Solving, Practice Test, Preparing for Standardized Tests, Standardized Test Practice and Study Guide and Review.

Lesson 1. Functions

Code: C312G0SU08L01

Objectives

- Determine whether a relation is a function.
- Write a function using function notation.

Concepts

- dependent variable
- function notation
- independent variable
- vertical line test

Lesson 2. Sequences and Equations

Code: C312G0SU08L02

Objectives

- Describe sequences using words and symbols
- Find terms of arithmetic sequences.

Concepts

- arithmetic sequence
- common difference
- sequence
- term

Lesson 3. Representing Linear Functions

Code: C312G0SU08L03

Objectives

- Solve linear equations with two variables.
- Graph linear equations using ordered pairs.

Concepts

- discrete data
- linear equation
- x -intercept
- y -intercept

Lesson 4. Rate of Change

Code: C312G0SU08L04

Objectives

- Find rates of change.
- Solve problems involving rates of change.

Concept

- rate of change

Lesson 5. Constant Rate of Change and Direct Variation

Code: C312G0SU08L05

Objectives

- Identify proportional and nonproportional relationships by finding a constant rate of change.
- Solve problems involving direct variation.

Concepts

- constant of variation
- constant rate of change
- direct variation
- linear relationship

Lesson 6. Slope

Code: C312G0SU08L06

Objectives

- Find the slope of a line.
- Use slope to describe a constant rate of change.

Concept

- slope

Lesson 7. Slope-Intercept Form

Code: C312G0SU08L07

Objectives

- Determine slopes and y -intercepts of lines.
- Graph linear equations using the slope and y -intercept.

Concept

- slope-intercept form

Lesson 8. Writing Linear Equations**Code:** C312G0SU08L08**Objectives**

- Write equations given the slope and y-intercept, a graph, a table, or two points.
- Use linear equations to solve problems.

Concept

- point-slope form

Lesson 9. Prediction Equations**Code:** C312G0SU08L09**Objectives**

- Draw lines of fit for sets of data.
- Use lines of fit to make predictions about data.

Concept

- line of fit

Lesson 10. Systems of Equations**Code:** C312G0SU08L10**Objectives**

- Solve systems of linear equations by graphing.
- Solve systems of linear equations by substitution.

Concepts

- substitution
- system of equation

Unit 9. Powers and Nonlinear Functions

At the end of this unit the student will have completed the objectives found in the following lessons.

General Objectives

- Write and evaluate expressions with exponents.
- Write and compare numbers in scientific notation.
- Use quadratic functions to solve problems.

Lesson 0. Powers and Nonlinear Functions

Code: C312G0SU09L00

Unit Documents: Get Ready, Key Concepts, Mid Unit Quiz, Mixed Problem Solving, Practice Test, Preparing for Standardized Tests, Standardized Test Practice and Study Guide and Review.

Lesson 1. Powers and Exponents

Code: C312G0SU09L01

Objectives

- Write expressions using exponents.
- Evaluate expressions containing exponents.

Concepts

- base
- exponent
- power

Lesson 2. Prime Factorization

Code: C312G0SU09L02

Objectives

- Write the prime factorizations of composite numbers.
- Factor monomials.

Concepts

- composite number
- factor tree
- monomial
- prime factorization
- prime number

Lesson 3. Multiplying and Dividing Monomials

Code: C312G0SU09L03

Objectives

- Multiply monomials.
- Divide monomials.

Lesson 4. Negative Exponents**Code:** C312G0SU09L04**Objectives**

- Write expressions using negative exponents.
- Evaluate numerical expressions containing negative exponents.

Lesson 5. Scientific Notation**Code:** C312G0SU09L05**Objectives**

- Express numbers in standard form and in scientific notation.
- Compare and order numbers written in scientific notation.

Concepts

- scientific notation
- standard form

Lesson 6. Powers of Monomials**Code:** C312G0SU09L06**Objectives**

- Find the power of a power.
- Find the power of a product.

Lesson 7. Linear and Nonlinear Functions**Code:** C312G0SU09L07**Objectives**

- Determine whether a function is linear or nonlinear from a graph.
- Determine whether a function is linear or nonlinear from an equation or a table.

Concept

- nonlinear function

Lesson 8. Quadratic Functions**Code:** C312G0SU09L08**Objectives**

- Graph quadratic functions.
- Use quadratic functions to solve problems.

Concepts

- parabola
- quadratic function

Lesson 9. Cubic and Exponential Functions**Code:** C312G0SU09L09**Objectives**

- Graph cubic functions.

- Graph exponential functions.

Concepts

- cubic function
- exponential function

Unit 10. Real Numbers and Right Triangles

At the end of this unit the student will have completed the objectives found in the following lessons.

General Objectives

- Identify irrational numbers and classify real numbers.
- Classify triangles.
- Solve problems using the Pythagorean Theorem and the Distance Formula.

Lesson 0. Real Numbers and Right Triangles

Code: C312G0SU10L00

Unit Documents: Get Ready, Key Concepts, Mid Unit Quiz, Mixed Problem Solving, Practice Test, Preparing for Standardized Tests, Standardized Test Practice and Study Guide and Review.

Lesson 1. Squares and Square Roots

Code: C312G0SU10L01

Objectives

- Find square roots.
- Estimate square roots.

Concepts

- perfect square
- radical sign
- square root

Lesson 2. The Real Number System

Code: C312G0SU10L02

Objectives

- Identify and compare numbers in the real number system.
- Solve equations by finding square roots.

Concepts

- irrational numbers
- real numbers

Lesson 3. Triangles

Code: C312G0SU10L03

Objectives

- Find the missing angle measure of a triangle.
- Classify triangles by properties and attributes.

Concepts

- congruent
- line segment
- triangle

- vertex

Lesson 4. The Pythagorean Theorem

Code: C312G0SU10L04

Objectives

- Use the Pythagorean Theorem to find the length of a side of a right triangle.
- Use the converse of the Pythagorean Theorem to determine whether a triangle is a right triangle.

Concepts

- converse
- hypotenuse
- legs
- Pythagorean Theorem
- solving a right triangle

Lesson 5. The Distance Formula

Code: C312G0SU10L05

Objectives

- Use the Distance Formula to find the distance between two points on a coordinate plane.
- Apply the Distance Formula to solve problems about figures on the coordinate plane.

Concept

- Distance Formula

Lesson 6. Special Right Triangles

Code: C312G0SU10L06

Objectives

- Find missing measures in 45° - 45° - 90° triangles.
- Find missing measures in 30° - 60° - 90° triangles.

Unit 11. Distance and Angle

At the end of this unit the student will have completed the objectives found in the following lessons.

General Objectives

- Identify the relationship of parallel and intersecting lines.
- Identify properties of congruent triangles.
- Find the area of polygons, irregular figures, and circles.

Lesson 0. Distance and Angle

Code: C312G0SU11L00

Unit Documents: Get Ready, Key Concepts, Mid Unit Quiz, Mixed Problem Solving, Practice Test, Preparing for Standardized Tests, Standardized Test Practice and Study Guide and Review.

Lesson 1. Angle and Line Relationships

Code: C312G0SU11L01

Objectives

- Examine relationships between pairs of angles.
- Examine relationships of angles formed by parallel lines and a transversal.

Concepts

- adjacent angles
- alternate exterior angles
- alternate interior angles
- complementary angles
- corresponding angles
- parallel lines
- perpendicular lines
- supplementary angles
- transversal
- vertical angles

Lesson 2. Congruent Triangles

Code: C312G0SU11L02

Objectives

- Identify corresponding parts of congruent triangles.
- Identify congruent triangles.

Concepts

- congruent
- corresponding parts

Lesson 3. Rotations**Code:** C312G0SU11L03**Objectives**

- Define, identify, and draw rotations.
- Determine if a figure has rotational symmetry.

Concepts

- center of rotation
- rotation
- rotational symmetry

Lesson 4. Quadrilaterals**Code:** C312G0SU11L04**Objectives**

- Find missing angle measures of a quadrilateral.
- Classify quadrilaterals.

Concept

- quadrilateral

Lesson 5. Polygons**Code:** C312G0SU11L05**Objectives**

- Classify polygons.
- Determine the sum of the measures of the interior angles of a polygon.

Concepts

- polygon
- diagonal
- interior angle
- regular polygon
- tessellation

Lesson 6. Area of Parallelograms, Triangles, and Trapezoids**Code:** C312G0SU11L06**Objectives**

- Find areas of parallelograms.
- Find areas of triangles and trapezoids.

Concepts

- altitude
- base

Lesson 7. Circles and Circumference**Code:** C312G0SU11L07**Objectives**

- Find the circumference of circles.

- Solve problems involving circumference.

Concepts

- center
- circle
- circumference
- diameter
- radius
- π (pi)

Lesson 8. Area of Circles

Code: C312G0SU11L08

Objectives

- Find areas of circles.
- Find areas of sectors.

Concepts

- central angle
- sector

Lesson 9. Area of Composite Figures

Code: C312G0SU11L09

Objectives

- Find the area of composite figures.
- Solve problems involving the area of composite figures.

Concept

- composite figure

Unit 12. Surface Area and Volume

At the end of this unit the student will have completed the objectives found in the following lessons.

General Objectives

- Describe three-dimensional figures.
- Find volumes and surface areas of three-dimensional figures.
- Examine properties of similar solids.

Lesson 0. Surface Area and Volume

Code: C312G0SU12L00

Unit Documents: Get Ready, Key Concepts, Mid Unit Quiz, Mixed Problem Solving, Practice Test, Preparing for Standardized Tests, Standardized Test Practice and Study Guide and Review.

Lesson 1. Three-Dimensional Figures

Code: C312G0SU12L01

Objectives

- Identify three-dimensional figures.
- Describe and draw vertical, horizontal, and angled cross sections of three-dimensional figures.

Concepts

- base
- cone
- cross section
- cylinder
- edge
- face
- plane
- polyhedron
- prism
- pyramid
- solid
- vertex

Lesson 2. Volume of Prisms

Code: C312G0SU12L02

Objectives

- Find volumes of prisms.
- Find volumes of composite figures.

Concept

- volume

Lesson 3. Volume of Cylinders**Code:** C312G0SU12L03**Objectives**

- Find the volumes of circular cylinders.
- Find the volumes of composite figures involving circular cylinders.

Lesson 4. Volume of Pyramids, Cones, and Spheres**Code:** C312G0SU12L04**Objectives**

- Find the volumes of pyramids and cones.
- Find the volumes of spheres.

Concept

- sphere

Lesson 5. Surface Area of Prisms**Code:** C312G0SU12L05**Objectives**

- Find lateral area and surface area of prisms.
- Find surface area of real-world objects shaped like prisms.

Concepts

- lateral area
- lateral face
- surface area

Lesson 6. Surface Area of Cylinders**Code:** C312G0SU12L06**Objectives**

- Find lateral and surface areas of cylinders.
- Compare surface areas of cylinders.

Lesson 7. Surface Area of Pyramids and Cones**Code:** C312G0SU12L07**Objectives**

- Find lateral areas and surface areas of pyramids.
- Find lateral areas and surface areas of cones.

Concepts

- regular pyramid
- slant height

Lesson 8. Similar Solids**Code:** C312G0SU12L08**Objectives**

- Identify similar solids.

- Examine properties of similar solids.

Concept

- similar solids

Unit 13. Statistics and Probability

At the end of this unit the student will have completed the objectives found in the following lessons.

General Objectives

- Translate verbal phrases into numerical expressions.
- Evaluate expressions and use the order of operations.
- Identify and use properties of addition and multiplication.
- Use words, tables, equations, and graphs to represent relations and functions.

Lesson 0. Statistics and Probability

Code: C312G0SU13L00

Unit Documents: Get Ready, Key Concepts, Mid Unit Quiz, Mixed Problem Solving, Practice Test, Preparing for Standardized Tests, Standardized Test Practice and Study Guide and Review.

Lesson 1. Measures of Central Tendency

Code: C312G0SU13L01

Objectives

- Use the mean, median, and mode as measures of central tendency.
- Choose an appropriate measure of central tendency and recognize measures of statistics.

Concepts

- mean
- measures of central tendency
- median
- mode

Lesson 2. Stem-and-Leaf Plots

Code: C312G0SU13L02

Objectives

- Display data using stem-and-leaf plots.
- Interpret data in a stem-and-leaf plot.

Concepts

- stem-and-leaf plot
- stems
- leaves
- back-to-back stem-and-leaf plot

Lesson 3. Measures of Variation

Code: C312G0SU13L03

Objectives

- Find measures of variation.
- Uses measures of variation to interpret and analyze data.

Concepts

- interquartile range
- lower quartile
- measures of variation
- outlier
- quartiles
- range
- upper quartile

Lesson 4. Box-and-Whisker Plots

Code: C312G0SU13L04

Objectives

- Display data in a box-and-whisker plot.
- Interpret data in a box-and-whisker plot.

Concept

- box-and-whisker plot

Lesson 5. Histograms

Code: C312G0SU13L05

Objectives

- Display data in a histogram.
- Interpret data in a histogram.

Concept

- histogram

Lesson 6. Theoretical and Experimental Probability

Code: C312G0SU13L06

Objectives

- Find the probability of simple events.
- Predict the actions of a larger group.

Concepts

- complement
- experimental probability
- odds against
- odds in favor
- outcomes
- probability
- random

- sample space
- simple event
- theoretical probability

Lesson 7. Using Sampling to Predict

Code: C312G0SU13L07

Objectives

- Identify various sampling techniques.
- Determine the validity of a sample and predict the actions of a larger group.

Concepts

- biased sample
- convenience sample
- population
- sample
- simple random sample
- stratified random sample
- systemic random sample
- unbiased sample
- voluntary response sample

Lesson 8. Counting Outcomes

Code: C312G0SU13L08

Objectives

- Use tree diagrams or the Fundamental Counting Principle to count outcomes.
- Use tree diagrams or the Fundamental Counting Principle to find the probability of an event.

Concepts

- tree diagrams
- Fundamental Counting Principle

Lesson 9. Permutations and Combinations

Code: C312G0SU13L09

Objectives

- Use permutations.
- Use combinations.

Concepts

- combinations
- permutations

Lesson 10. Probability of Compound Events

Code: C312G0SU13L10

Objectives

- Find the probability of independent and dependent events.
- Find the probability of mutually exclusive events.

Concepts

- compound events
- dependent events
- independent events
- mutually exclusive events

Unit 14. Looking Ahead to Algebra I

At the end of this unit the student will have completed the objectives found in the following lessons.

General Objectives

- Translate verbal phrases into numerical expressions.
- Evaluate expressions and use the order of operations.
- Identify and use properties of addition and multiplication.
- Use words, tables, equations, and graphs to represent relations and functions.

Lesson 0. Looking Ahead to Algebra I

Code: C312G0SU14L00

Unit Documents: Get Ready, Key Concepts, Mid Unit Quiz, Mixed Problem Solving, Practice Test, Preparing for Standardized Tests, Standardized Test Practice and Study Guide and Review.

Lesson 1. Polynomials

Code: C312G0SU14L01

Objectives

- Use models to simplify polynomials.
- Use polynomials to represent real-world problems.

Concept

- polynomials

Lesson 2. Adding Polynomials

Code: C312G0SU14L02

Objectives

- Add polynomials.
- Find perimeter by adding polynomials.

Lesson 3. Subtracting Polynomials

Code: C312G0SU14L03

Objectives

- Subtract polynomials.
- Solve real-world problems by subtracting polynomials.

Lesson 4. Multiplying a Binomial by a Monomial

Code: C312G0SU14L04

Objectives

- Use models to multiply a binomial by a monomial.
- Multiply a binomial by a monomial to solve equations.

Concept

- binomial

Lesson 5. Multiplying Two Binomials**Code:** C312G0SU14L05**Objectives**

- Multiply two binomials by using models.
- Multiply two binomials by using the Distributive Property.

Lesson 6. Dividing a Polynomial by a Monomial**Code:** C312G0SU14L06**Objectives**

- Divide polynomials by monomials.
- Solve problems using division of polynomials.

Lesson 7. Using the GCF to Factor Polynomials**Code:** C312G0SU14L07**Objectives**

- Use the Greatest Common Factor to factor polynomials.
- Solve problems by using the Greatest Common Factor to factor polynomials.

Concepts

- factored form
- factoring

Lesson 8. Factoring Trinomials**Code:** C312G0SU14L08**Objectives**

- Factor trinomials in the form $x^2 + bx + c$.
- Solve real-world problems by factoring trinomials.

Concept

- trinomial