ALEKS®

Algebra 1A

This course covers the topics shown below.
Students navigate learning paths based on their level of readiness.
Institutional users may customize the scope and sequence to meet curricular needs.

Curriculum (324 topics + 225 additional topics)

- Arithmetic Readiness (64 topics)
    - Whole Numbers (15 topics)
        - ◊ Rounding to tens or hundreds
        - ◊ Rounding to hundreds or thousands
        - ◊ Introduction to exponents
        - ◊ Writing expressions using exponents
        - ◊ Order of operations with whole numbers
        - ◊ Order of operations with whole numbers and grouping symbols
        - ◊ Order of operations with whole numbers and exponents: Basic
        - ◊ Order of operations with whole numbers and exponents: Advanced
        - ◊ Evaluating an algebraic expression: Whole numbers with two operations
        - ◊ Evaluating an algebraic expression: Whole number operations and exponents
        - ◊ Factors
        - ◊ Prime numbers
        - ◊ Prime factorization
        - ◊ Greatest common factor of 2 numbers
        - ◊ Least common multiple of 2 numbers
    - Fractions (16 topics)
        - ◊ Equivalent fractions
        - ◊ Simplifying a fraction
        - ◊ Using a common denominator to order fractions
        - ◊ Addition or subtraction of fractions with the same denominator
        - ◊ Finding the LCD of two fractions
        - ◊ Introduction to addition or subtraction of fractions with different denominators
        - ◊ Addition or subtraction of fractions with different denominators
        - ◊ Fractional part of a circle
        - ◊ Product of a unit fraction and a whole number
        - ◊ Product of a fraction and a whole number: Problem type 1
        - ◊ Introduction to fraction multiplication
        - ◊ Fraction multiplication
        - ◊ The reciprocal of a number
        - ◊ Division involving a whole number and a fraction
        - ◊ Fraction division
        - ◊ Mixed arithmetic operations with fractions
    - Mixed Numbers (2 topics)
        - ◊ Writing an improper fraction as a mixed number
        - ◊ Writing a mixed number as an improper fraction
    - Decimals (18 topics)
        - ◊ Decimal place value: Tenths and hundredths

◊ Rounding decimals
◊ Introduction to ordering decimals
◊ Ordering decimals
◊ Ordering fractions and decimals
◊ Converting a fraction to a terminating decimal
◊ Converting a fraction to a repeating decimal
◊ Addition of aligned decimals
◊ Subtraction of aligned decimals
◊ Multiplication of a decimal by a whole number
◊ Multiplication of a decimal by a power of ten
◊ Decimal multiplication: Problem type 1
◊ Division of a decimal by a whole number
◊ Division of a decimal by a power of ten
◊ Division of a decimal by a 2−digit decimal
◊ Word problem with one decimal operation: Problem type 1
◊ Word problem with one decimal operation: Problem type 2
◊ Word problem with multiple decimal operations: Problem type 1
♦ Introduction to Square Roots and Cube Roots (3 topics)
◊ Square root of a perfect square
◊ Estimating a square root
◊ Square root of a rational perfect square
♦ Powers of Ten and Scientific Notation (3 topics)
◊ Power of 10: Positive exponent
◊ Scientific notation with positive exponent
◊ Scientific notation with negative exponent
♦ Geometry (7 topics)
◊ Perimeter of a polygon
◊ Perimeter of a square or a rectangle
◊ Area of a square or a rectangle
◊ Area of a triangle
◊ Circumference of a circle
◊ Circumference and area of a circle
◊ Volume of a rectangular prism
• Real Numbers (39 topics)
♦ Classifying, Plotting, and Ordering (8 topics)
◊ Identifying numbers as integers or non−integers
◊ Identifying numbers as rational or irrational
◊ Writing a signed number for a real−world situation
◊ Plotting integers on a number line
◊ Fractional position on a number line
◊ Plotting rational numbers on a number line
◊ Ordering integers
◊ Ordering real numbers
♦ Operations with Signed Numbers (23 topics)
◊ Integer addition: Problem type 1
◊ Integer addition: Problem type 2
◊ Integer subtraction: Problem type 1
◊ Integer subtraction: Problem type 2
◊ Integer subtraction: Problem type 3
◊ Word problem with addition or subtraction of integers
◊ Signed fraction addition or subtraction: Basic
◊ Signed fraction addition or subtraction: Advanced
◊ Signed decimal addition and subtraction

◊ Signed decimal addition and subtraction with 3 numbers
◊ Integer multiplication and division
◊ Multiplication of 3 or 4 integers
◊ Signed fraction multiplication: Basic
◊ Signed fraction multiplication: Advanced
◊ Classifying sums and products as rational or irrational
◊ Exponents and integers: Problem type 1
◊ Exponents and signed fractions
◊ Order of operations with integers
◊ Order of operations with integers and exponents
◊ Evaluating a linear expression: Integer multiplication with addition or subtraction
◊ Evaluating a quadratic expression: Integers
◊ Absolute value of a number
◊ Operations with absolute value: Problem type 2
♦ Properties of Real Numbers (8 topics)
◊ Properties of addition
◊ Properties of real numbers
◊ Distributive property: Whole number coefficients
◊ Distributive property: Integer coefficients
◊ Combining like terms: Whole number coefficients
◊ Combining like terms: Integer coefficients
◊ Combining like terms: Advanced
◊ Combining like terms in a quadratic expression
• Linear Equations (70 topics)
♦ One−Step Linear Equations (10 topics)
◊ Additive property of equality with whole numbers
◊ Additive property of equality with decimals
◊ Additive property of equality with integers
◊ Additive property of equality with a negative coefficient
◊ Additive property of equality with signed fractions
◊ Multiplicative property of equality with whole numbers
◊ Multiplicative property of equality with fractions
◊ Multiplicative property of equality with decimals
◊ Multiplicative property of equality with integers
◊ Multiplicative property of equality with signed fractions
♦ Multi−Step Linear Equations (18 topics)
◊ Identifying solutions to a linear equation in one variable: Two−step equations
◊ Using two steps to solve an equation with whole numbers
◊ Solving a two−step equation with integers
◊ Solving a multi−step equation given in fractional form
◊ Solving a two−step equation with signed fractions
◊ Solving a two−step equation with signed decimals
◊ Introduction to solving an equation with parentheses
◊ Introduction to solving an equation with variables on the same side
◊ Solving a linear equation with several occurrences of the variable: Variables on the same side
◊ Solving a linear equation with several occurrences of the variable: Variables on both sides
◊ Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution
◊ Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution
◊ Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions

◊ Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients
◊ Solving equations with zero, one, or infinitely many solutions
◊ Identifying properties used to solve a linear equation
◊ Introduction to algebraic symbol manipulation
◊ Algebraic symbol manipulation: Problem type 1

♦ Writing Expressions and Equations (5 topics)
   ◊ Translating a phrase into a one−step expression
   ◊ Writing a one−step expression for a real−world situation
   ◊ Translating a phrase into a two−step expression
   ◊ Translating a sentence into a one−step equation
   ◊ Translating a sentence into a multi−step equation

♦ Applications (11 topics)
   ◊ Solving a fraction word problem using a linear equation of the form $Ax = B$
   ◊ Solving a word problem with two unknowns using a linear equation
   ◊ Solving a decimal word problem using a linear equation of the form $Ax + B = C$
   ◊ Solving a decimal word problem using a linear equation with the variable on both sides
   ◊ Solving a word problem involving consecutive integers
   ◊ Solving a value mixture problem using a linear equation
   ◊ Word problem on unit rates associated with ratios of whole numbers: Decimal answers
   ◊ Solving a one−step word problem using the formula $d = rt$
   ◊ Finding a side length given the perimeter and side lengths with variables
   ◊ Finding the side length of a rectangle given its perimeter or area
   ◊ Finding the value for a new score that will yield a given mean

♦ Proportions (8 topics)
   ◊ Writing ratios for real−world situations
   ◊ Solving a proportion of the form $x/a = b/c$
   ◊ Solving a proportion of the form $(x+a)/b = c/d$
   ◊ Solving a proportion of the form $a/(x+b) = c/x$
   ◊ Solving a word problem on proportions using a unit rate
   ◊ Word problem on proportions: Problem type 1
   ◊ Similar polygons
   ◊ Indirect measurement

♦ Percents (10 topics)
   ◊ Converting between percentages and decimals
   ◊ Converting a percentage to a fraction in simplest form
   ◊ Converting a fraction to a percentage: Denominator of 20, 25, or 50
   ◊ Writing a ratio as a percentage without a calculator
   ◊ Finding a percentage of a whole number without a calculator: Basic
   ◊ Applying the percent equation
   ◊ Finding the sale price without a calculator given the original price and percent discount
   ◊ Finding the original price given the sale price and percent discount
   ◊ Finding the percentage increase or decrease: Advanced
   ◊ Finding simple interest without a calculator

♦ Measurement and Unit Conversion (5 topics)
   ◊ U.S. Customary unit conversion with whole number values
   ◊ Metric distance conversion with whole number values
   ◊ Converting between metric and U.S. Customary unit systems
   ◊ Converting between temperatures in Fahrenheit and Celsius
   ◊ Finding the absolute error and percent error of a measurement

♦ Absolute Value Equations (3 topics)
   ◊ Solving an absolute value equation: Problem type 1
   ◊ Solving an absolute value equation: Problem type 2

◊ Solving an absolute value equation: Problem type 3
- Linear Inequalities (29 topics)
  - Writing and Graphing Inequalities (9 topics)
    ◊ Translating a sentence by using an inequality symbol
    ◊ Translating a sentence into a one−step inequality
    ◊ Translating a sentence into a multi−step inequality
    ◊ Writing an inequality for a real−world situation
    ◊ Graphing a linear inequality on the number line
    ◊ Writing an inequality given a graph on the number line
    ◊ Translating a sentence into a compound inequality
    ◊ Graphing a compound inequality on the number line
    ◊ Writing a compound inequality given a graph on the number line
  - Linear Inequalities and Applications (15 topics)
    ◊ Identifying solutions to a two−step linear inequality in one variable
    ◊ Additive property of inequality with whole numbers
    ◊ Additive property of inequality with integers
    ◊ Additive property of inequality with signed fractions
    ◊ Additive property of inequality with signed decimals
    ◊ Multiplicative property of inequality with integers
    ◊ Multiplicative property of inequality with signed fractions
    ◊ Solving a two−step linear inequality: Problem type 1
    ◊ Solving a two−step linear inequality: Problem type 2
    ◊ Solving a two−step linear inequality with a fractional coefficient
    ◊ Solving a linear inequality with multiple occurrences of the variable: Problem type 1
    ◊ Solving a linear inequality with multiple occurrences of the variable: Problem type 2
    ◊ Solving a linear inequality with multiple occurrences of the variable: Problem type 3
    ◊ Solving a compound linear inequality: Graph solution, basic
    ◊ Solving a decimal word problem using a two−step linear inequality
  - Absolute Value Inequalities (5 topics)
    ◊ Writing an absolute value inequality given a graph on the number line
    ◊ Solving an absolute value inequality: Problem type 1
    ◊ Solving an absolute value inequality: Problem type 2
    ◊ Solving an absolute value inequality: Problem type 3
    ◊ Solving an absolute value inequality: Problem type 4
- Functions and Lines (83 topics)
  - Sets, Relations, and Functions (11 topics)
    ◊ Table for a linear function
    ◊ Evaluating functions: Linear and quadratic or cubic
    ◊ Domain and range from ordered pairs
    ◊ Graphing an integer function and finding its range for a given domain
    ◊ Identifying functions from relations
    ◊ Vertical line test
    ◊ Finding where a function is increasing, decreasing, or constant given the graph
    ◊ Finding local maxima and minima of a function given the graph
    ◊ Writing a function rule given a table of ordered pairs: One−step rules
    ◊ Introduction to the composition of two functions
    ◊ Inverse functions: Linear, discrete
  - Ordered Pairs (5 topics)
    ◊ Reading a point in the coordinate plane
    ◊ Plotting a point in the coordinate plane
    ◊ Identifying solutions to a linear equation in two variables
    ◊ Table for a linear equation
    ◊ Finding a solution to a linear equation in two variables

- ♦ Graphing Lines (10 topics)
    - ◊ Graphing a linear equation of the form y = mx
    - ◊ Graphing a line given its equation in slope–intercept form: Integer slope
    - ◊ Graphing a line given its equation in slope–intercept form: Fractional slope
    - ◊ Graphing a line given its equation in standard form
    - ◊ Graphing a line given its x– and y–intercepts
    - ◊ Graphing a line by first finding its x– and y–intercepts
    - ◊ Graphing a line through a given point with a given slope
    - ◊ Graphing a line by first finding its slope and y–intercept
    - ◊ Graphing a line given its equation in point–slope form
    - ◊ Graphing a vertical or horizontal line
- ♦ Equations of Lines (17 topics)
    - ◊ Identifying linear functions given ordered pairs
    - ◊ Rewriting a linear equation in the form Ax + By = C
    - ◊ Finding x– and y–intercepts given the graph of a line on a grid
    - ◊ Finding x– and y–intercepts of a line given the equation: Basic
    - ◊ Classifying slopes given graphs of lines
    - ◊ Finding slope given the graph of a line on a grid
    - ◊ Finding slope given two points on the line
    - ◊ Finding the slope of horizontal and vertical lines
    - ◊ Finding the coordinate that yields a given slope
    - ◊ Finding the slope and y–intercept of a line given its equation in the form y = mx + b
    - ◊ Finding the slope and y–intercept of a line given its equation in the form Ax + By = C
    - ◊ Writing an equation and graphing a line given its slope and y–intercept
    - ◊ Writing an equation of a line given the y–intercept and another point
    - ◊ Writing an equation in slope–intercept form given the slope and a point
    - ◊ Writing an equation in point–slope form given the slope and a point
    - ◊ Writing the equation of the line through two given points
    - ◊ Writing the equations of vertical and horizontal lines through a given point
- ♦ Applications (13 topics)
    - ◊ Writing and evaluating a function that models a real–world situation: Advanced
    - ◊ Writing an equation and drawing its graph to model a real–world situation: Advanced
    - ◊ Domain and range of a linear function that models a real–world situation
    - ◊ Interpreting the parameters of a linear function that models a real–world situation
    - ◊ Combining functions to write a new function that models a real–world situation
    - ◊ Comparing properties of linear functions given in different forms
    - ◊ Application problem with a linear function: Finding a coordinate given the slope and a point
    - ◊ Application problem with a linear function: Finding a coordinate given two points
    - ◊ Identifying parallel and perpendicular lines from equations
    - ◊ Finding slopes of lines parallel and perpendicular to a line given in the form Ax + By = C
    - ◊ Writing equations of lines parallel and perpendicular to a given line through a point
    - ◊ Solving a linear equation by graphing
    - ◊ Choosing a graph to fit a narrative: Advanced
- ♦ Direct Variation (4 topics)
    - ◊ Identifying direct variation equations
    - ◊ Identifying direct variation from ordered pairs and writing equations
    - ◊ Writing a direct variation equation
    - ◊ Word problem on direct variation
- ♦ Arithmetic Sequences (8 topics)
    - ◊ Finding the next terms of an arithmetic sequence with whole numbers
    - ◊ Finding the next terms of an arithmetic sequence with integers
    - ◊ Identifying arithmetic sequences and finding the common difference
    - ◊ Finding a specified term of an arithmetic sequence given the first terms

◊ Finding a specified term of an arithmetic sequence given the common difference and first term
◊ Writing an explicit rule for an arithmetic sequence
◊ Finding the first terms of a sequence using a recursive rule
◊ Writing a recursive rule for an arithmetic sequence
- ♦ Scatterplots and Lines of Best Fit (8 topics)
  - ◊ Scatter plots and correlation
  - ◊ Sketching the line of best fit
  - ◊ Predictions from the line of best fit
  - ◊ Approximating the equation of a line of best fit and making predictions
  - ◊ Computing residuals
  - ◊ Interpreting residual plots
  - ◊ Linear relationship and the correlation coefficient
  - ◊ Identifying correlation and causation
- ♦ Absolute Value Functions (5 topics)
  - ◊ Translating the graph of an absolute value function: One step
  - ◊ Translating the graph of an absolute value function: Two steps
  - ◊ Graphing an absolute value equation of the form $y = A|x|$
  - ◊ Graphing an absolute value equation in the plane: Basic
  - ◊ How the leading coefficient affects the graph of an absolute value function
- ♦ Introduction to Graphing Quadratic and Cubic Functions (2 topics)
  - ◊ Graphing a parabola of the form $y = ax^2$
  - ◊ Graphing a parabola of the form $y = ax^2 + c$
- • Systems (20 topics)
  - ♦ Systems of Linear Equations (9 topics)
    - ◊ Identifying solutions to a system of linear equations
    - ◊ Classifying systems of linear equations from graphs
    - ◊ Graphically solving a system of linear equations
    - ◊ Solving a system of linear equations using substitution
    - ◊ Solving a system of linear equations using elimination with addition
    - ◊ Solving a system of linear equations using elimination with multiplication and addition
    - ◊ Solving a system of linear equations with fractional coefficients
    - ◊ Solving a system of linear equations with decimal coefficients
    - ◊ Identifying the operations used to create equivalent systems of equations
  - ♦ Applications (6 topics)
    - ◊ Interpreting the graphs of two functions
    - ◊ Solving a word problem involving a sum and another basic relationship using a system of linear equations
    - ◊ Solving a word problem using a system of linear equations of the form $Ax + By = C$
    - ◊ Solving a word problem using a system of linear equations of the form $y = mx + b$
    - ◊ Solving a value mixture problem using a system of linear equations
    - ◊ Solving a distance, rate, time problem using a system of linear equations
  - ♦ Graphing Linear Inequalities (4 topics)
    - ◊ Identifying solutions to a linear inequality in two variables
    - ◊ Graphing a linear inequality in the plane: Slope–intercept form
    - ◊ Graphing a linear inequality in the plane: Standard form
    - ◊ Graphing a linear inequality in the plane: Vertical or horizontal line
  - ♦ Systems of Linear Inequalities (1 topics)
    - ◊ Graphing a system of two linear inequalities: Basic
- • Data Analysis and Probability (19 topics)
  - ♦ Graphical Displays (9 topics)
    - ◊ Constructing a line plot
    - ◊ Constructing a histogram for numerical data
    - ◊ Interpreting a bar graph

◊ Interpreting a line graph
　　　　　　◊ Interpreting a circle graph or pie chart
　　　　　　◊ Interpreting a stem–and–leaf plot
　　　　　　◊ Using back–to–back stem–and–leaf plots to compare data sets
　　　　　　◊ Constructing a box–and–whisker plot
　　　　　　◊ Using box–and–whisker plots to compare data sets
　　♦ Data Analysis (10 topics)
　　　　　　◊ Mode of a data set
　　　　　　◊ Finding the mode and range of a data set
　　　　　　◊ Mean of a data set
　　　　　　◊ Mean and median of a data set
　　　　　　◊ How changing a value affects the mean and median
　　　　　　◊ Choosing the best measure to describe data
　　　　　　◊ Computing a percentage from a table of values
　　　　　　◊ Calculating relative frequencies in a contingency table
　　　　　　◊ Five–number summary and interquartile range
　　　　　　◊ Population standard deviation

• Other Topics Available(*) (225 additional topics)
　　♦ Arithmetic Readiness (33 topics)
　　　　　　◊ Estimating a sum of whole numbers
　　　　　　◊ Word problem with common multiples
　　　　　　◊ Multi–step word problem involving fractions and multiplication
　　　　　　◊ Addition of mixed numbers with the same denominator and carry
　　　　　　◊ Subtraction of mixed numbers with the same denominator and borrowing
　　　　　　◊ Addition or subtraction of mixed numbers with different denominators
　　　　　　◊ Mixed number multiplication: Problem type 1
　　　　　　◊ Mixed number division
　　　　　　◊ Converting a decimal to a proper fraction in simplest form: Advanced
　　　　　　◊ Estimating a decimal sum or difference
　　　　　　◊ Cube root of an integer
　　　　　　◊ Power of 10: Negative exponent
　　　　　　◊ Finding the missing length in a figure
　　　　　　◊ Area of a piecewise rectangular figure
　　　　　　◊ Word problem involving the area between two rectangles
　　　　　　◊ Area of a parallelogram
　　　　　　◊ Area of a trapezoid
　　　　　　◊ Perimeter involving rectangles and circles
　　　　　　◊ Circumference ratios
　　　　　　◊ Area involving rectangles and circles
　　　　　　◊ Word problem involving the area between two concentric circles
　　　　　　◊ Area involving inscribed figures
　　　　　　◊ Surface area of a cube or a rectangular prism
　　　　　　◊ Surface area of a triangular prism
　　　　　　◊ Surface area of a cylinder: Exact answers in terms of pi
　　　　　　◊ Surface area of a sphere
　　　　　　◊ Volume of a triangular prism
　　　　　　◊ Volume of a pyramid
　　　　　　◊ Volume of a cylinder
　　　　　　◊ Word problem involving the rate of filling or emptying a cylinder
　　　　　　◊ Volume of a cone: Exact answers in terms of pi
　　　　　　◊ Volume of a sphere

◊ Finding supplementary and complementary angles
- ♦ Real Numbers (4 topics)
  - ◊ Reading the temperature from a thermometer
  - ◊ Exponents and integers: Problem type 2
  - ◊ Computing distances between decimals on the number line
  - ◊ Understanding the distributive property
- ♦ Linear Equations (19 topics)
  - ◊ Additive property of equality with fractions and mixed numbers
  - ◊ Solving an equation to find the value of an expression
  - ◊ Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators
  - ◊ Algebraic symbol manipulation: Problem type 2
  - ◊ Writing a multi−step equation for a real−world situation
  - ◊ Solving a fraction word problem using a linear equation with the variable on both sides
  - ◊ Solving a word problem with three unknowns using a linear equation
  - ◊ Solving a percent mixture problem using a linear equation
  - ◊ Solving a word problem involving rates and time conversion
  - ◊ Solving a distance, rate, time problem using a linear equation
  - ◊ Finding the perimeter or area of a rectangle given one of these values
  - ◊ Solving equations involving vertical angles
  - ◊ Finding an angle measure of a triangle given two angles
  - ◊ Finding angle measures of a right or isosceles triangle given angles with variables
  - ◊ Word problem on proportions: Problem type 2
  - ◊ Similar right triangles
  - ◊ Converting between compound units: Basic
  - ◊ Converting between compound units: Advanced
  - ◊ Solving an absolute value equation: Problem type 4
- ♦ Linear Inequalities (5 topics)
  - ◊ Writing a multi−step inequality for a real−world situation
  - ◊ Solving inequalities with no solution or all real numbers as solutions
  - ◊ Solving a compound linear inequality: Graph solution, advanced
  - ◊ Solving a decimal word problem using a linear inequality with the variable on both sides
  - ◊ Solving an absolute value inequality: Problem type 5
- ♦ Functions and Lines (13 topics)
  - ◊ Set builder notation
  - ◊ Union and intersection of finite sets
  - ◊ Variable expressions as inputs of functions: Problem type 1
  - ◊ Finding inputs and outputs of a function from its graph
  - ◊ Writing a function rule given a table of ordered pairs: Two−step rules
  - ◊ Identifying linear equations: Advanced
  - ◊ Finding x− and y−intercepts of a line given the equation: Advanced
  - ◊ Identifying independent and dependent variables from equations or real−world situations
  - ◊ Interpreting direct variation from a graph
  - ◊ Graphing an absolute value equation in the plane: Advanced
  - ◊ Graphing a cubic function of the form $y = ax^3$
  - ◊ Evaluating a piecewise−defined function
  - ◊ Graphing a piecewise−defined function: Problem type 1
- ♦ Systems (12 topics)
  - ◊ Solving a 2x2 system of linear equations that is inconsistent or consistent dependent
  - ◊ Solving a 3x3 system of linear equations: Problem type 1
  - ◊ Solving a percent mixture problem using a system of linear equations
  - ◊ Solving a tax rate or interest rate problem using a system of linear equations
  - ◊ Solving a word problem using a 3x3 system of linear equations: Problem type 1

◊ Graphing a system of two linear inequalities: Advanced
◊ Graphing a system of three linear inequalities
◊ Solving a word problem using a system of linear inequalities: Problem type 1
◊ Scalar multiplication of a matrix
◊ Addition or subtraction of matrices
◊ Linear combination of matrices
◊ Gauss–Jordan elimination with a 2x2 matrix
♦ Exponents (50 topics)
◊ Evaluating expressions with exponents of zero
◊ Evaluating an expression with a negative exponent: Positive fraction base
◊ Evaluating an expression with a negative exponent: Negative integer base
◊ Ordering numbers with positive exponents
◊ Ordering numbers with negative exponents
◊ Rewriting an algebraic expression without a negative exponent
◊ Understanding the product rule of exponents
◊ Introduction to the product rule of exponents
◊ Product rule with positive exponents: Multivariate
◊ Introduction to the product rule with negative exponents
◊ Product rule with negative exponents
◊ Introduction to the quotient rule of exponents
◊ Quotient of expressions involving exponents
◊ Quotient rule with negative exponents: Problem type 1
◊ Quotient rule with negative exponents: Problem type 2
◊ Multiplying and dividing numbers written in scientific notation
◊ Understanding the power rules of exponents
◊ Introduction to the power rules of exponents
◊ Power rules with positive exponents
◊ Power of a power rule with negative exponents
◊ Power rules with negative exponents
◊ Power and product rules with positive exponents
◊ Power and quotient rules with positive exponents
◊ Power and quotient rules with negative exponents: Problem type 1
◊ Power and quotient rules with negative exponents: Problem type 2
◊ Power, product, and quotient rules with negative exponents
◊ Converting between radical form and exponent form
◊ Rational exponents: Non–unit fraction exponent with a whole number base
◊ Rational exponents: Negative exponents and fractional bases
◊ Rational exponents: Products and quotients with negative exponents
◊ Rational exponents: Powers of powers with negative exponents
◊ Table for an exponential function
◊ Evaluating an exponential function that models a real–world situation
◊ Finding the initial amount and rate of change given an exponential function
◊ Writing an equation that models exponential growth or decay
◊ Writing an exponential function rule given a table of ordered pairs
◊ Solving an exponential equation by finding common bases: Linear exponents
◊ Finding a final amount in a word problem on exponential growth or decay
◊ Finding the final amount in a word problem on compound interest
◊ Graphing an exponential function: $f(x) = a^x$
◊ Graphing an exponential function: $f(x) = a(b)^x$
◊ Comparing linear, polynomial, and exponential functions
◊ Finding the next terms of a geometric sequence with whole numbers
◊ Finding the next terms of a geometric sequence with signed numbers
◊ Identifying arithmetic and geometric sequences

◊ Identifying geometric sequences and finding the common ratio
◊ Finding a specified term of a geometric sequence given the first terms
◊ Finding a specified term of a geometric sequence given the common ratio and first term
◊ Arithmetic and geometric sequences: Identifying and writing an explicit rule
◊ Writing recursive rules for arithmetic and geometric sequences
♦ Polynomials and Factoring (60 topics)
◊ Degree and leading coefficient of a univariate polynomial
◊ Degree of a multivariate polynomial
◊ Simplifying a sum or difference of two univariate polynomials
◊ Simplifying a sum or difference of three univariate polynomials
◊ Simplifying a sum or difference of multivariate polynomials
◊ Multiplying a univariate polynomial by a monomial with a positive coefficient
◊ Multiplying a univariate polynomial by a monomial with a negative coefficient
◊ Multiplying a multivariate polynomial by a monomial
◊ Multiplying binomials with leading coefficients of 1
◊ Multiplying binomials with leading coefficients greater than 1
◊ Multiplying binomials in two variables
◊ Multiplying conjugate binomials: Univariate
◊ Multiplying conjugate binomials: Multivariate
◊ Squaring a binomial: Univariate
◊ Squaring a binomial: Multivariate
◊ Multiplying binomials with negative coefficients
◊ Multiplication involving binomials and trinomials in one variable
◊ Multiplication involving binomials and trinomials in two variables
◊ Dividing a polynomial by a monomial: Univariate
◊ Dividing a polynomial by a monomial: Multivariate
◊ Polynomial long division: Problem type 1
◊ Polynomial long division: Problem type 2
◊ Polynomial long division: Problem type 3
◊ Closure properties of integers and polynomials
◊ Introduction to the GCF of two monomials
◊ Greatest common factor of two multivariate monomials
◊ Greatest common factor of three univariate monomials
◊ Factoring out a monomial from a polynomial: Univariate
◊ Factoring out a monomial from a polynomial: Multivariate
◊ Factoring out a binomial from a polynomial: GCF factoring, basic
◊ Factoring a univariate polynomial by grouping: Problem type 1
◊ Factoring a univariate polynomial by grouping: Problem type 2
◊ Factoring a multivariate polynomial by grouping: Problem type 1
◊ Factoring a multivariate polynomial by grouping: Problem type 2
◊ Factoring a quadratic with leading coefficient 1
◊ Factoring a quadratic in two variables with leading coefficient 1
◊ Factoring out a constant before factoring a quadratic
◊ Factoring a quadratic with leading coefficient greater than 1: Problem type 1
◊ Factoring a quadratic with leading coefficient greater than 1: Problem type 2
◊ Factoring a quadratic with leading coefficient greater than 1: Problem type 3
◊ Factoring a quadratic by the ac−method
◊ Factoring a quadratic in two variables with leading coefficient greater than 1
◊ Factoring a quadratic with a negative leading coefficient
◊ Factoring a product of a quadratic trinomial and a monomial
◊ Factoring a perfect square trinomial with leading coefficient 1
◊ Factoring a perfect square trinomial with leading coefficient greater than 1
◊ Factoring a perfect square trinomial in two variables

◊ Factoring a difference of squares in one variable: Basic
◊ Factoring a difference of squares in one variable: Advanced
◊ Factoring a difference of squares in two variables
◊ Factoring a polynomial involving a GCF and a difference of squares: Univariate
◊ Factoring a polynomial involving a GCF and a difference of squares: Multivariate
◊ Factoring with repeated use of the difference of squares formula
◊ Factoring a sum or difference of two cubes
◊ Solving an equation written in factored form
◊ Finding the roots of a quadratic equation of the form $ax^2 + bx = 0$
◊ Finding the roots of a quadratic equation with leading coefficient 1
◊ Finding the roots of a quadratic equation with leading coefficient greater than 1
◊ Solving a quadratic equation needing simplification
◊ Solving a word problem using a quadratic equation with rational roots

♦ Data Analysis and Probability (29 topics)
◊ Interpreting a double bar graph
◊ Computations from a circle graph
◊ Angle measure in a circle graph
◊ Weighted mean
◊ Rejecting unreasonable claims based on average statistics
◊ Finding if a question can be answered by the data
◊ Making a reasonable inference based on proportion statistics
◊ Percentiles
◊ Interpreting a Venn diagram of 2 sets
◊ Interpreting a Venn diagram of 3 sets
◊ Interpreting a tree diagram
◊ Introduction to the counting principle
◊ Counting principle
◊ Factorial expressions
◊ Computing permutations and combinations
◊ Word problem involving permutations
◊ Word problem involving combinations
◊ Permutations, combinations, and the multiplication principle for counting
◊ Introduction to the probability of an event
◊ Probability of an event
◊ Odds of an event
◊ Outcomes and event probability
◊ Probabilities involving two dice
◊ Area as probability
◊ Experimental and theoretical probability
◊ Introduction to expectation
◊ Probability of independent events
◊ Probability of dependent events
◊ Probability of the union of two events

Other Topics Available *By default, these topics are NOT included in the course, but can be added using the content editor in the Teacher Module.*