

Pre–Statistics

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 (338 topics + 227 additional topics)

- Arithmetic Readiness (73 topics)
 - ◆ Integers (17 topics)
 - ◇ Plotting integers on a number line
 - ◇ Ordering integers
 - ◇ Word problem on unit rates associated with ratios of whole numbers: Whole number answers
 - ◇ Describing an increasing or decreasing pattern from a table of values
 - ◇ Writing a signed number for a real–world situation
 - ◇ Interpreting a table of signed numbers that relate to a real–world situation: Problem type 1
 - ◇ Absolute value of a number
 - ◇ Integer addition: Problem type 1
 - ◇ Integer addition: Problem type 2
 - ◇ Integer subtraction: Problem type 1
 - ◇ Integer subtraction: Problem type 3
 - ◇ Addition and subtraction with 3 integers
 - ◇ Word problem with addition or subtraction of integers
 - ◇ Computing the distance between two integers on a number line
 - ◇ Integer multiplication and division
 - ◇ Multiplication of 3 or 4 integers
 - ◇ Division involving zero
 - ◆ Fractions and Decimals (30 topics)
 - ◇ Introduction to non–unit fractions
 - ◇ Simplifying a fraction
 - ◇ Product of a fraction and a whole number: Problem type 1
 - ◇ Introduction to fraction multiplication
 - ◇ Fraction multiplication
 - ◇ Product of a fraction and a whole number: Problem type 2
 - ◇ Signed fraction multiplication: Basic
 - ◇ Word problem involving fractions and multiplication
 - ◇ The reciprocal of a number
 - ◇ Division involving a whole number and a fraction
 - ◇ Fraction division
 - ◇ Complex fraction without variables: Problem type 1
 - ◇ Addition or subtraction of fractions with the same denominator and simplification
 - ◇ Addition or subtraction of fractions with different denominators
 - ◇ Signed fraction addition or subtraction: Basic
 - ◇ Decimal place value: Tenths and hundredths
 - ◇ Ordering decimals
 - ◇ Rounding decimals
 - ◇ Decimal addition with 3 numbers
 - ◇ Decimal subtraction: Basic

- ◇ Average of two numbers
- ◇ Signed decimal addition and subtraction
- ◇ Multiplying a decimal by a whole number
- ◇ Multiplication of a decimal by a power of ten
- ◇ Word problem with decimal addition and multiplication
- ◇ Division of a decimal by a whole number
- ◇ Division of a decimal by a power of ten
- ◇ Word problem with decimal subtraction and division
- ◇ Converting a fraction with a denominator of 10 or 100 to a decimal
- ◇ Using a calculator to convert a fraction to a rounded decimal
- ◆ Exponents and Order of Operations (9 topics)
 - ◇ Writing expressions using exponents
 - ◇ Introduction to exponents
 - ◇ Order of operations with whole numbers
 - ◇ Order of operations with integers
 - ◇ Order of operations with whole numbers and exponents: Basic
 - ◇ Exponents and fractions
 - ◇ Exponents and integers: Problem type 1
 - ◇ Exponents and signed fractions
 - ◇ Evaluating expressions with exponents of zero
- ◆ Introduction to Expressions (8 topics)
 - ◇ Evaluating an algebraic expression: Whole number addition or subtraction
 - ◇ Evaluating an algebraic expression: Whole number multiplication or division
 - ◇ Evaluating an algebraic expression: Whole numbers with two operations
 - ◇ Evaluating a formula
 - ◇ Evaluating an algebraic expression: Whole numbers with one operation and an exponent
 - ◇ Evaluating a linear expression: Integer multiplication with addition or subtraction
 - ◇ Evaluating a quadratic expression: Integers
 - ◇ Area of a circle
- ◆ Plotting, Ordering, and Classifying Real numbers (3 topics)
 - ◇ Square root of a perfect square
 - ◇ Using a calculator to approximate a square root
 - ◇ Interpreting a Venn diagram with 2 sets for a real–world situation
- ◆ Properties of Real Numbers (6 topics)
 - ◇ Multiplying a constant and a linear monomial
 - ◇ Distributive property: Whole number coefficients
 - ◇ Combining like terms: Whole number coefficients
 - ◇ Combining like terms: Integer coefficients
 - ◇ Distributive property: Integer coefficients
 - ◇ Using distribution and combining like terms to simplify: Univariate
- Ratios and Percentages (38 topics)
 - ◆ Ratios and Unit Rates (9 topics)
 - ◇ Writing ratios for real–world situations
 - ◇ Identifying statements that describe a ratio
 - ◇ Finding a unit price
 - ◇ Using tables to compare ratios
 - ◇ Computing unit prices to find the better buy
 - ◇ Solving a word problem on proportions using a unit rate
 - ◇ Word problem on unit rates associated with ratios of whole numbers: Decimal answers
 - ◇ Finding missing values in a table of equivalent ratios
 - ◇ Using a table of equivalent ratios to find a missing quantity in a ratio
 - ◆ Introduction to Proportions (3 topics)
 - ◇ Solving a proportion of the form $x/a=b/c$: Basic

- ◇ Solving a proportion of the form $x/a = b/c$
- ◇ Word problem on proportions: Problem type 1
- ◆ Converting Between Fractions, Decimals, and Percentages (10 topics)
 - ◇ Converting a fraction with a denominator of 100 to a percentage
 - ◇ Converting a percentage to a fraction with a denominator of 100
 - ◇ Introduction to converting a percentage to a decimal
 - ◇ Introduction to converting a decimal to a percentage
 - ◇ Converting between percentages and decimals
 - ◇ Converting between percentages and decimals in a real–world situation
 - ◇ Converting a fraction to a percentage: Denominator of 4, 5, or 10
 - ◇ Converting a fraction to a percentage: Denominator of 20, 25, or 50
 - ◇ Using a calculator to convert a fraction to a rounded percentage
 - ◇ Converting a fraction to a percentage in a real–world situation
- ◆ Applications Involving Percentages (11 topics)
 - ◇ Finding a percentage of a whole number
 - ◇ Applying the percent equation: Problem type 1
 - ◇ Finding a percentage of a total amount: Real–world situations
 - ◇ Writing a ratio as a percentage
 - ◇ Computing a percentage from a table of values
 - ◇ Making an inference using a two–way frequency table
 - ◇ Finding the multiplier to give a final amount after a percentage increase or decrease
 - ◇ Finding the final amount given the original amount and a percentage increase or decrease
 - ◇ Finding the sale price given the original price and percent discount
 - ◇ Finding the percentage increase or decrease: Basic
 - ◇ Finding the percentage increase or decrease: Advanced
- ◆ Measurement (5 topics)
 - ◇ U.S. Customary length conversions involving rounding decimals
 - ◇ U.S. Customary length conversions involving dimensional analysis
 - ◇ Word problem involving U.S. Customary length conversions using dimensional analysis
 - ◇ Metric distance conversion with whole number values
 - ◇ Converting between metric and U.S. Customary unit systems
- Linear Equations and Inequalities (39 topics)
 - ◆ One–Step Linear Equations (7 topics)
 - ◇ Additive property of equality with decimals
 - ◇ Additive property of equality with integers
 - ◇ Multiplicative property of equality with whole numbers: Fractional answers
 - ◇ 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 (9 topics)
 - ◇ Identifying solutions to a linear equation in one variable: Two–step equations
 - ◇ Solving a two–step equation with integers
 - ◇ Introduction to solving an equation with parentheses
 - ◇ Solving a multi–step equation given in fractional form
 - ◇ 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 proportion of the form $(x+a)/b = c/d$
 - ◆ Solving Formulas for a Variable (4 topics)

- ◇ Solving for a variable in terms of other variables using addition or subtraction: Basic
- ◇ Solving for a variable in terms of other variables using multiplication or division: Basic
- ◇ Solving for a variable in terms of other variables using multiplication or division: Advanced
- ◇ Solving for a variable in terms of other variables using addition or subtraction with division
- ◆ Applications (7 topics)
 - ◇ Writing a one–step expression for a real–world situation
 - ◇ Translating a phrase into a one–step expression
 - ◇ Translating a phrase into a two–step expression
 - ◇ Translating a sentence into a one–step equation
 - ◇ Writing an equation of the form $Ax + B = C$ to solve a word problem
 - ◇ Solving a decimal word problem using a linear equation of the form $Ax + B = C$
 - ◇ Solving a word problem with two unknowns using a linear equation
- ◆ Writing and Graphing Inequalities (3 topics)
 - ◇ Writing an inequality for a real–world situation
 - ◇ Graphing a linear inequality on the number line
 - ◇ Graphing a compound inequality on the number line
- ◆ Linear Inequalities and Applications (7 topics)
 - ◇ Additive property of inequality with integers
 - ◇ Multiplicative property of inequality with integers
 - ◇ Solving a two–step linear inequality: Problem type 1
 - ◇ Solving a two–step linear inequality: Problem type 2
 - ◇ Solving a linear inequality with multiple occurrences of the variable: Problem type 1
 - ◇ Solving a word problem using a two–step linear inequality
 - ◇ Solving a decimal word problem using a two–step linear inequality
- ◆ Set Notation and Operations (2 topics)
 - ◇ Finding sets and complements of sets
 - ◇ Union and intersection of finite sets
- Lines (48 topics)
 - ◆ Graphing and Intercepts (19 topics)
 - ◇ Reading a point in the coordinate plane
 - ◇ Plotting a point in the coordinate plane
 - ◇ Finding distances between points that share a common coordinate given the graph
 - ◇ Table for a linear equation
 - ◇ Identifying solutions to a linear equation in two variables
 - ◇ Finding a solution to a linear equation in two variables
 - ◇ 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 vertical or horizontal line
 - ◇ 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
 - ◇ X– and y–intercepts of a line given the equation in standard form
 - ◇ Graphing a line given its x– and y–intercepts
 - ◇ Graphing a line by first finding its x– and y–intercepts
 - ◇ Making a table and plotting points given a unit rate
 - ◇ Writing an equation to represent a proportional relationship
 - ◇ Interpreting a line graph
 - ◆ Slope (4 topics)
 - ◇ Finding slope given the graph of a line in quadrant 1 that models a real–world situation
 - ◇ Finding slope given the graph of a line on a grid
 - ◇ Finding slope given two points on the line
 - ◇ Graphing a line given its slope and y–intercept

- ◆ Equations of Lines (8 topics)
 - ◇ Writing a function rule given a table of ordered pairs: One–step rules
 - ◇ 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 $Ax + By = C$
 - ◇ Graphing a line by first finding its slope and y–intercept
 - ◇ Writing an equation of a line given its slope and y–intercept
 - ◇ Writing an equation in slope–intercept form given the slope and a point
 - ◇ Writing an equation of a line given the y–intercept and another point
 - ◇ Writing the equation of the line through two given points
- ◆ Applications (7 topics)
 - ◇ Finding outputs of a two–step function with decimals that models a real–world situation: Two variable equation
 - ◇ Finding inputs and outputs of a two–step function that models a real–world situation: Two variable equation
 - ◇ Writing and evaluating a function that models a real–world situation: Advanced
 - ◇ Graphing ordered pairs and writing an equation from a table of values in context
 - ◇ Writing an equation and drawing its graph to model a real–world situation: Advanced
 - ◇ Finding the intercepts and rate of change given a graph of a linear function
 - ◇ Interpreting the parameters of a linear function that models a real–world situation
- ◆ Scatterplots and Lines of Best Fit (10 topics)
 - ◇ Constructing a scatter plot
 - ◇ Sketching the least–squares regression line
 - ◇ Scatter plots and correlation
 - ◇ Predictions from the least–squares regression line
 - ◇ Approximating the equation of a line of best fit and making predictions
 - ◇ Classifying linear and nonlinear relationships from scatter plots
 - ◇ Linear relationship and the sample correlation coefficient
 - ◇ Computing residuals
 - ◇ Interpreting residual plots
 - ◇ Identifying correlation and causation
- Exponents and Functions (30 topics)
 - ◆ Product, Power, and Quotient Rules (9 topics)
 - ◇ Understanding the product rule of exponents
 - ◇ Introduction to the product rule of exponents
 - ◇ Product rule with positive exponents: Univariate
 - ◇ Understanding the power rules of exponents
 - ◇ Introduction to the power of a power rule of exponents
 - ◇ Introduction to the power of a product rule of exponents
 - ◇ Power rules with positive exponents: Multivariate products
 - ◇ Power rules with positive exponents: Multivariate quotients
 - ◇ Introduction to the quotient rule of exponents
 - ◆ Negative Exponents (2 topics)
 - ◇ Evaluating an expression with a negative exponent: Whole number base
 - ◇ Evaluating an expression with a negative exponent: Positive fraction base
 - ◆ Scientific Notation (3 topics)
 - ◇ Scientific notation with positive exponent
 - ◇ Scientific notation with negative exponent
 - ◇ Converting between scientific notation and standard form in a real–world situation
 - ◆ Function Evaluation (4 topics)
 - ◇ Table for a linear function
 - ◇ Evaluating functions: Linear and quadratic or cubic
 - ◇ Finding outputs of a two–step function with decimals that models a real–world situation: Function notation

- ◇ Finding inputs and outputs of a two–step function that models a real–world situation: Function notation
- ◆ Graphs of Functions (3 topics)
 - ◇ Finding an output of a function from its graph
 - ◇ Graphing a function of the form $f(x) = ax + b$: Integer slope
 - ◇ Graphing a function of the form $f(x) = ax^2$
- ◆ Exponential Functions (9 topics)
 - ◇ Table for an exponential function
 - ◇ Using a calculator to evaluate exponential expressions
 - ◇ Evaluating an exponential function that models a real–world situation
 - ◇ Finding a final amount in a word problem on exponential growth or decay
 - ◇ Finding the initial amount and rate of change given an exponential function
 - ◇ Writing an equation that models exponential growth or decay
 - ◇ Graphing an exponential function and its asymptote: $f(x)=b^x$
 - ◇ Writing an exponential function rule given a table of ordered pairs
 - ◇ Choosing an exponential model and using it to make a prediction
- Descriptive Statistics (56 topics)
 - ◆ Displaying Data (23 topics)
 - ◇ Classification of variables
 - ◇ Discrete versus continuous variables
 - ◇ Choosing an appropriate method for gathering data: Problem type 1
 - ◇ Choosing an appropriate method for gathering data: Problem type 2
 - ◇ Classifying samples
 - ◇ Interpreting a tally table
 - ◇ Constructing a two–way frequency table: Advanced
 - ◇ Constructing a frequency distribution for non–grouped data
 - ◇ Constructing a line plot
 - ◇ Constructing a bar graph for non–numerical data
 - ◇ Interpreting a bar graph
 - ◇ Interpreting a double bar graph
 - ◇ Constructing a frequency distribution for grouped data
 - ◇ Constructing a frequency distribution and a histogram
 - ◇ Histograms for grouped data
 - ◇ Constructing a relative frequency distribution for grouped data
 - ◇ Interpreting relative frequency histograms
 - ◇ Constructing a frequency distribution and a frequency polygon
 - ◇ Cumulative distributions and ogives
 - ◇ Interpreting a stem–and–leaf display
 - ◇ Constructing a percent bar graph
 - ◇ Interpreting a pie chart
 - ◇ Finding a percentage of a total amount in a circle graph
 - ◆ Venn Diagrams (5 topics)
 - ◇ Interpreting Venn diagram cardinalities with 2 sets for a real–world situation
 - ◇ Constructing a Venn diagram with 2 sets
 - ◇ Constructing a Venn diagram with 2 sets to solve a word problem
 - ◇ Venn diagrams: Two events
 - ◇ Shading a Venn diagram with 3 sets to represent a group
 - ◆ Measures of Average (15 topics)
 - ◇ Mean of a data set
 - ◇ Finding the mean of a symmetric distribution
 - ◇ Computations involving the mean, sample size, and sum of a data set
 - ◇ Finding the value for a new score that will yield a given mean
 - ◇ Rejecting unreasonable claims based on average statistics

- ◇ Weighted mean: Tabular data
- ◇ Approximating the mean of a data set given a frequency distribution
- ◇ Comparing means without calculation
- ◇ Introduction to summation notation
- ◇ Approximating the mean of a data set given a histogram
- ◇ Median of a data set
- ◇ Mode of a data set
- ◇ Mean, median, and mode: Computations
- ◇ How changing a value affects the mean and median
- ◇ Mean, median, and mode: Comparisons
- ◆ Measures of Variation (7 topics)
 - ◇ Range of a data set
 - ◇ Finding the mode and range from a line plot
 - ◇ Comparing measures of center and variation
 - ◇ Identifying the center, spread, and shape of a data set
 - ◇ Comparing standard deviations without calculation
 - ◇ Population standard deviation
 - ◇ Sample standard deviation
- ◆ Measures of Position (6 topics)
 - ◇ Percentage of data below a specified value
 - ◇ Percentiles
 - ◇ Interpreting percentile ranks
 - ◇ Five–number summary and interquartile range
 - ◇ Box–and–whisker plots
 - ◇ Using box–and–whisker plots to compare data sets
- Probability (54 topics)
 - ◆ Fundamental Counting Principle (4 topics)
 - ◇ Interpreting a tree diagram
 - ◇ Introduction to the counting principle
 - ◇ Counting principle
 - ◇ Counting principle with repetition allowed
 - ◆ Permutations and Combinations (3 topics)
 - ◇ Factorial expressions
 - ◇ Computing permutations and combinations
 - ◇ Introduction to permutations and combinations
 - ◆ Probability and Odds of an Event (12 topics)
 - ◇ Determining a sample space and outcomes for a simple event
 - ◇ Determining a sample space and outcomes for a compound event
 - ◇ Introduction to the probability of an event
 - ◇ Probability involving one die or choosing from n distinct objects
 - ◇ Probability involving choosing from objects that are not distinct
 - ◇ Probability of selecting one card from a standard deck
 - ◇ Understanding likelihood
 - ◇ Probabilities of an event and its complement
 - ◇ Experimental and theoretical probability
 - ◇ Outcomes and event probability
 - ◇ Area as probability
 - ◇ Finding the odds in favor and against
 - ◆ Expected Value (5 topics)
 - ◇ Introduction to expectation
 - ◇ Calculating relative frequencies in a contingency table
 - ◇ Computing expected value in a game of chance
 - ◇ Computing expected value in a business application

- ◇ Making reasonable inferences based on proportion statistics
- ◆ Probability of Independent and Dependent Events (11 topics)
 - ◇ Probability of independent events: Decimal answers
 - ◇ Probability of dependent events: Decimal answers
 - ◇ Probabilities involving two rolls of a die: Decimal answers
 - ◇ Probabilities of draws with replacement
 - ◇ Determining outcomes for compound events and complements of events
 - ◇ Computing conditional probability using a sample space
 - ◇ Using a Venn diagram to understand the multiplication rule for probability
 - ◇ Outcomes and event probability: Conditional probability
 - ◇ Computing conditional probability using a two–way frequency table
 - ◇ Computing conditional probability to make an inference using a two–way frequency table
 - ◇ Conditional probability: Basic
- ◆ Probability Involving a Union of Events (6 topics)
 - ◇ Outcomes and event probability: Addition rule
 - ◇ Using a Venn diagram to understand the addition rule for probability
 - ◇ Word problem involving the probability of a union
 - ◇ Probability of intersection or union: Word problems
 - ◇ Computing probability involving the addition rule using a two–way frequency table
 - ◇ Computing conditional probability using a large two–way frequency table
- ◆ Simulations (4 topics)
 - ◇ Identifying outcomes in a random number table used to simulate a simple event
 - ◇ Using a random number table to simulate a simple event
 - ◇ Generating a random number table with technology to simulate a simple event
 - ◇ Generating random samples from a population with known characteristics
- ◆ Probability Distributions (9 topics)
 - ◇ Using the graph of a distribution to find probabilities: Basic
 - ◇ Using the graph of a distribution to find probabilities: Advanced
 - ◇ Using the empirical rule to identify values and percentages of a normal distribution
 - ◇ Word problem involving calculations from a normal distribution
 - ◇ Shading a region and finding its standard normal probability
 - ◇ Standard normal probabilities
 - ◇ Normal versus standard normal density curves
 - ◇ Normal distribution: Finding a probability, basic
 - ◇ Normal distribution: Finding a probability, advanced
- Other Topics Available(*) (227 additional topics)
 - ◆ Arithmetic Readiness (46 topics)
 - ◇ Prime numbers
 - ◇ Prime factorization
 - ◇ Interpreting a table of signed numbers that relate to a real–world situation: Problem type 2
 - ◇ Identifying relative change when combining two quantities
 - ◇ Operations with absolute value: Problem type 1
 - ◇ Word problem with multiplication or division of integers
 - ◇ Identifying equivalent signed fractions
 - ◇ Writing an improper fraction as a mixed number
 - ◇ Fractional position on a number line
 - ◇ Plotting fractions on a number line
 - ◇ Signed fraction division
 - ◇ Word problem involving fractions and division
 - ◇ Writing fractions with a common denominator to add or subtract
 - ◇ Signed fraction subtraction involving double negation

- ◇ Word problem involving addition or subtraction of fractions with different denominators
- ◇ Fractional part of a circle
- ◇ Reading decimal position on a number line: Tenths
- ◇ Reading decimal position on a number line: Hundredths
- ◇ Signed decimal addition and subtraction with 3 numbers
- ◇ Signed decimal multiplication
- ◇ Signed decimal division
- ◇ Converting a proper fraction with a denominator of 2, 4, or 5 to a decimal
- ◇ Converting a fraction to a terminating decimal: Basic
- ◇ Power of 10: Positive exponent
- ◇ Order of operations with whole numbers and grouping symbols
- ◇ Order of operations with whole numbers and exponents: Advanced
- ◇ Order of operations with integers and exponents
- ◇ Exponents and integers: Problem type 2
- ◇ Plotting rational numbers on a number line
- ◇ Cube root of an integer
- ◇ Ordering real numbers
- ◇ Identifying numbers as integers or non-integers
- ◇ Identifying numbers as rational or irrational
- ◇ Constructing a Venn diagram to classify rational numbers
- ◇ Constructing a Venn diagram to describe relationships between sets of rational numbers
- ◇ Constructing a Venn diagram to classify real numbers
- ◇ Constructing a Venn diagram to describe relationships between sets of real numbers
- ◇ Introduction to properties of addition
- ◇ Distributive property: Fractional coefficients
- ◇ Properties of addition
- ◇ Introduction to properties of multiplication
- ◇ Properties of real numbers
- ◇ Combining like terms: Fractional coefficients
- ◇ Identifying properties used to simplify an algebraic expression
- ◇ Using distribution with double negation and combining like terms to simplify: Multivariate
- ◇ Combining like terms in a quadratic expression
- ◆ Ratios and Percentages (15 topics)
 - ◇ Solving a one-step word problem using the formula $d = rt$
 - ◇ Word problem on proportions: Problem type 2
 - ◇ Finding the percentage of a grid that is shaded
 - ◇ Converting a percentage to a fraction in simplest form
 - ◇ Computing percentages for categories of a budget
 - ◇ Finding the rate of a tax or commission
 - ◇ Finding the total amount given the percentage of a partial amount
 - ◇ Finding the total cost including tax or markup
 - ◇ Combined effect of more than one markup or discount
 - ◇ Finding the original amount given the result of a percentage increase or decrease
 - ◇ Finding the absolute error and percent error of a measurement
 - ◇ Converting between compound units: Basic
 - ◇ Converting between compound units: Advanced
 - ◇ Conversions with currency
 - ◇ Word problem involving conversion between compound units using dimensional analysis
- ◆ Linear Equations and Inequalities (36 topics)
 - ◇ Additive property of equality with signed fractions
 - ◇ Additive property of equality with a negative coefficient
 - ◇ Identifying properties used to solve a linear equation
 - ◇ Solving a two-step equation with signed decimals

- ◇ Introduction to solving an equation with variables on the same side
- ◇ Introduction to solving a linear equation with a variable on each side
- ◇ Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions
- ◇ Clearing fractions in an equation
- ◇ Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators
- ◇ Solving a two–step equation with signed fractions
- ◇ Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators
- ◇ Solving for a variable in terms of other variables using addition or subtraction: Advanced
- ◇ Solving for a variable inside parentheses in terms of other variables
- ◇ Solving for a variable in terms of other variables in a linear equation with fractions
- ◇ Translating a sentence into a multi–step equation
- ◇ Solving a fraction word problem using a linear equation of the form $Ax = B$
- ◇ Writing a multi–step equation for a real–world situation
- ◇ Translating a sentence by using an inequality symbol
- ◇ Translating a sentence into a one–step inequality
- ◇ Writing an inequality given a graph on the number line
- ◇ Translating a sentence into a compound inequality
- ◇ Writing a compound inequality given a graph on the number line
- ◇ Set–builder and interval notation
- ◇ Additive property of inequality with signed fractions
- ◇ Additive property of inequality with signed decimals
- ◇ Multiplicative property of inequality with signed fractions
- ◇ Identifying solutions to a two–step linear inequality in one variable
- ◇ Solving a two–step linear inequality with a fractional coefficient
- ◇ 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 word problem using a one–step linear inequality
- ◇ Identifying elements of sets for a real world situation
- ◇ Finding sets and complements of sets for a real–world situation
- ◇ Unions, intersections, and complements involving 2 sets
- ◇ Unions and intersections involving the empty set or universal set
- ◆ Lines (10 topics)
 - ◇ Classifying slopes given graphs of lines
 - ◇ Finding the slope of horizontal and vertical lines
 - ◇ Writing an equation and graphing a line given its slope and y–intercept
 - ◇ Finding the slope, y–intercept, and equation for a linear function given a table of values
 - ◇ Writing an equation in point–slope form given the slope and a point
 - ◇ Writing the equations of vertical and horizontal lines through a given point
 - ◇ Finding outputs of a one–step function that models a real–world situation: Two variable equation
 - ◇ Finding the initial amount and rate of change given a table for a linear function
 - ◇ Application problem with a linear function: Finding a coordinate given two points
 - ◇ Identifying independent and dependent variables from equations or real–world situations
- ◆ Exponents and Functions (68 topics)
 - ◇ Product rule with positive exponents: Multivariate
 - ◇ Power and product rules with positive exponents
 - ◇ Simplifying a ratio of multivariate monomials: Basic
 - ◇ Simplifying a ratio of univariate monomials
 - ◇ Quotient of expressions involving exponents
 - ◇ Simplifying a ratio of multivariate monomials: Advanced

- ◇ Power and quotient rules with positive exponents
- ◇ Power of 10: Negative exponent
- ◇ Evaluating an expression with a negative exponent: Negative integer base
- ◇ Rewriting an algebraic expression without a negative exponent
- ◇ Introduction to the product rule with negative exponents
- ◇ Product rule with negative exponents
- ◇ Quotient rule with negative exponents: Problem type 1
- ◇ Quotient rule with negative exponents: Problem type 2
- ◇ Power of a power rule with negative exponents
- ◇ Power rules with negative exponents
- ◇ Power and quotient rules with negative exponents: Problem type 1
- ◇ Power and quotient rules with negative exponents: Problem type 2
- ◇ Expressing calculator notation as scientific notation
- ◇ Converting between radical form and exponent form
- ◇ Rational exponents: Unit fraction exponents and whole number bases
- ◇ Rational exponents: Non–unit fraction exponent with a whole number base
- ◇ Rational exponents: Negative exponents and fractional bases
- ◇ Simplifying a sum or difference of two univariate polynomials
- ◇ Multiplying binomials with leading coefficients of 1
- ◇ Squaring a binomial: Univariate
- ◇ Factoring a quadratic with leading coefficient 1
- ◇ Factoring a perfect square trinomial with leading coefficient 1
- ◇ Identifying functions from relations
- ◇ Vertical line test
- ◇ Domain and range from ordered pairs
- ◇ Finding outputs of a one–step function that models a real–world situation: Function notation
- ◇ Finding inputs and outputs of a function from its graph
- ◇ Finding domain and range from a linear graph in context
- ◇ Graphing a function of the form $f(x) = ax + b$: Fractional slope
- ◇ Graphing a function of the form $f(x) = ax^2 + c$
- ◇ Finding where a function is increasing, decreasing, or constant given the graph
- ◇ Choosing a graph to fit a narrative: Basic
- ◇ Solving an equation written in factored form
- ◇ Finding the roots of a quadratic equation with leading coefficient 1
- ◇ Solving an equation of the form $x^2 = a$ using the square root property
- ◇ Finding the vertex, intercepts, and axis of symmetry from the graph of a parabola
- ◇ Graphing a parabola of the form $y = ax^2$
- ◇ Graphing a parabola of the form $y = ax^2 + c$
- ◇ Graphing a parabola of the form $y = (x-h)^2 + k$
- ◇ Finding the x –intercept(s) and the vertex of a parabola
- ◇ Domain and range from the graph of a parabola
- ◇ Choosing a quadratic model and using it to make a prediction
- ◇ Finding the time to reach a limit in a word problem on exponential growth or decay
- ◇ Graphing an exponential function and its asymptote: $f(x) = a(b)^x$
- ◇ Graphing an exponential function and its asymptote: $f(x) = b^{-x}$ or $f(x) = -b^{ax}$
- ◇ Finding domain and range from the graph of an exponential function
- ◇ Comparing linear, polynomial, and exponential functions
- ◇ Identifying linear, quadratic, and exponential functions given ordered pairs
- ◇ Using a calculator to evaluate natural and common logarithmic expressions
- ◇ Converting between logarithmic and exponential equations
- ◇ Evaluating logarithmic expressions
- ◇ Solving an equation of the form $\log_b a = c$
- ◇ Graphing a logarithmic function: Basic

- ◇ Basic properties of logarithms
- ◇ Using properties of logarithms to evaluate expressions
- ◇ Expanding a logarithmic expression: Problem type 1
- ◇ Writing an expression as a single logarithm
- ◇ Change of base for logarithms: Problem type 1
- ◇ Solving a multi-step equation involving a single logarithm: Problem type 1
- ◇ Solving a multi-step equation involving a single logarithm: Problem type 2
- ◇ Solving an equation involving logarithms on both sides: Problem type 1
- ◇ Solving an exponential equation by using logarithms: Decimal answers, basic
- ◆ Descriptive Statistics (21 topics)
 - ◇ Interpreting a pictograph table
 - ◇ Computations from pie charts
 - ◇ Measuring an angle with the protractor
 - ◇ Angle measure in a circle graph
 - ◇ Finding if a question can be answered by the data
 - ◇ Interpreting a Venn diagram with 3 sets for a real-world situation
 - ◇ Interpreting Venn diagram cardinalities with 3 sets for a real-world situation
 - ◇ Constructing a Venn diagram with 3 sets
 - ◇ Constructing a Venn diagram with 3 sets to solve a word problem
 - ◇ Venn diagrams: Three events
 - ◇ Using a model to find the mean
 - ◇ Understanding the mean graphically: Two bars
 - ◇ Understanding the mean graphically: Four or more bars
 - ◇ Summation of indexed data
 - ◇ Finding outliers in a data set
 - ◇ Choosing the best measure to describe data
 - ◇ Using back-to-back stem-and-leaf displays to compare data sets
 - ◇ Comparing sample means
 - ◇ Approximating the standard deviation of a data set given a histogram
 - ◇ Transforming the mean and standard deviation of a data set
 - ◇ Computing mean absolute deviation from a list of numerical values
- ◆ Probability (31 topics)
 - ◇ Counting principle involving a specified arrangement
 - ◇ Counting arrangements of objects that are not all distinct
 - ◇ Permutations and combinations: Problem type 1
 - ◇ Permutations and combinations: Problem type 2
 - ◇ Permutations and combinations: Problem type 3
 - ◇ Counting using combinations and addition
 - ◇ Counting using combinations and a complement
 - ◇ Counting five-card hands from a standard deck
 - ◇ Probabilities of a permutation and a combination
 - ◇ Converting between probability and odds
 - ◇ Finding odds in favor and against drawing a card from a standard deck
 - ◇ Making predictions using experimental data for compound events
 - ◇ Identifying independent events given descriptions of experiments
 - ◇ Experimental and theoretical probability for compound events
 - ◇ Probability of independent events involving a standard deck of cards
 - ◇ Probability of dependent events involving a standard deck of cards
 - ◇ Probability of dependent events involving a survey
 - ◇ Probabilities of draws without replacement
 - ◇ Probability of five-card hands
 - ◇ Identifying independent events given values of probabilities
 - ◇ Tree diagrams for conditional probabilities

- ◇ Probability of the union of two events
- ◇ Law of total probabilities
- ◇ Bayes' theorem
- ◇ Identifying outcomes in a random number table used to simulate a compound event
- ◇ Using a random number table to simulate a compound event
- ◇ Generating a random number table with technology to simulate a compound event
- ◇ Using a random number table to make a fair decision
- ◇ Discrete probability distribution: Basic
- ◇ Chebyshev's theorem and the empirical rule
- ◇ Normal distribution: Finding a raw score

***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.*