



Math Prep for Statics

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 Show All (477 topics + 366 additional topics)

- Arithmetic (46 topics)
 - ◆ Integers (14 topics)
 - ◇ Plotting integers on a number line
 - ◇ Integer addition: Problem type 2
 - ◇ Integer subtraction: Problem type 3
 - ◇ Integer multiplication and division
 - ◇ Exponents and integers: Problem type 1
 - ◇ Exponents and integers: Problem type 2
 - ◇ Order of operations with integers
 - ◇ Order of operations with integers and exponents
 - ◇ Absolute value of a number
 - ◇ Operations with absolute value: Problem type 1
 - ◇ Evaluating a linear expression: Integer multiplication with addition or subtraction
 - ◇ Evaluating a quadratic expression: Integers
 - ◇ Additive property of equality with integers
 - ◇ Multiplicative property of equality with whole numbers
 - ◆ Introduction to Perimeter and Area (3 topics)
 - ◇ Perimeter of a square or a rectangle
 - ◇ Area of a square or a rectangle
 - ◇ Word problem involving the area of a rectangle: Problem type 2
 - ◆ Fractions (11 topics)
 - ◇ Simplifying a fraction
 - ◇ Addition or subtraction of fractions with the same denominator
 - ◇ Addition or subtraction of fractions with different denominators
 - ◇ Signed fraction addition or subtraction: Basic
 - ◇ Product of a fraction and a whole number: Problem type 1
 - ◇ Introduction to fraction multiplication
 - ◇ Fraction multiplication
 - ◇ Signed fraction multiplication: Basic
 - ◇ Exponents and fractions
 - ◇ Exponents and signed fractions
 - ◇ Fraction division
 - ◆ Decimals and Percents (10 topics)
 - ◇ Rounding decimals
 - ◇ Signed decimal addition and subtraction
 - ◇ Multiplication of a decimal by a power of ten
 - ◇ Division of a decimal by a power of ten
 - ◇ Converting between percentages and decimals
 - ◇ Converting between percentages and decimals in a real-world situation

- ◇ Applying the percent equation: Problem type 1
- ◇ Finding a percentage of a total amount: Real–world situations
- ◇ Finding the sale price given the original price and percent discount
- ◇ Finding the percentage increase or decrease: Advanced
- ◆ Properties of Real Numbers (8 topics)
 - ◇ Properties of addition
 - ◇ Combining like terms: Integer coefficients
 - ◇ Distributive property: Whole number coefficients
 - ◇ Properties of real numbers
 - ◇ Distributive property: Integer coefficients
 - ◇ Using distribution and combining like terms to simplify: Univariate
 - ◇ Using distribution with double negation and combining like terms to simplify: Multivariate
 - ◇ Introduction to the power of a product rule of exponents
- Linear Equations and Inequalities (52 topics)
 - ◆ Linear Equations (17 topics)
 - ◇ Additive property of equality with signed fractions
 - ◇ Additive property of equality with decimals
 - ◇ Additive property of equality with a negative coefficient
 - ◇ Multiplicative property of equality with signed fractions
 - ◇ Multiplicative property of equality with decimals
 - ◇ Identifying solutions to a linear equation in one variable: Two–step equations
 - ◇ Solving a two–step equation with integers
 - ◇ Solving an equation to find the value of an expression
 - ◇ Solving a two–step equation with signed decimals
 - ◇ 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 two–step equation with signed fractions
 - ◇ Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators
 - ◇ Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients
 - ◇ Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators
 - ◇ Solving equations with zero, one, or infinitely many solutions
 - ◆ Solving Formulas for a Variable (7 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 addition or subtraction: Advanced
 - ◇ 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
 - ◇ 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
 - ◆ Rates, Proportions, and Applications of Linear Equations (13 topics)
 - ◇ Writing a one–step expression for a real–world situation
 - ◇ Translating a sentence into a one–step equation
 - ◇ Word problem on unit rates associated with ratios of whole numbers: Decimal answers
 - ◇ 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 $a/(x+b) = c/x$

- ◇ Word problem on proportions: Problem type 1
- ◇ Word problem on proportions: Problem type 2
- ◇ 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
- ◇ Solving a decimal word problem using a linear equation with the variable on both sides
- ◇ Solving a value mixture problem using a linear equation
- ◆ Linear Inequalities (12 topics)
 - ◇ Graphing a compound inequality on the number line
 - ◇ Set-builder and interval notation
 - ◇ Identifying solutions to a two-step linear inequality in one variable
 - ◇ 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 linear inequality with multiple occurrences of the variable: Problem type 2
 - ◇ Solving a compound linear inequality: Graph solution, basic
 - ◇ Solving a compound linear inequality: Interval notation
 - ◇ Writing a multi-step inequality for a real-world situation
 - ◇ Solving a decimal word problem using a two-step linear inequality
 - ◇ Solving a decimal word problem using a linear inequality with the variable on both sides
- ◆ Absolute Value Equations and Inequalities (3 topics)
 - ◇ Introduction to solving an absolute value equation
 - ◇ Solving an absolute value equation: Problem type 1
 - ◇ Solving an absolute value equation: Problem type 2
- Geometry (33 topics)
 - ◆ Triangles (9 topics)
 - ◇ Finding an angle measure of a triangle given two angles
 - ◇ Finding an angle measure for a triangle with an extended side
 - ◇ Finding side lengths and angle measures of isosceles and equilateral triangles
 - ◇ Finding angle measures of a triangle given angles with variables
 - ◇ Finding angle measures of an isosceles triangle given angles with variables
 - ◇ Pythagorean Theorem
 - ◇ Word problem involving the Pythagorean Theorem
 - ◇ Finding a missing side length given two similar triangles
 - ◇ Special right triangles: Decimal answers
 - ◆ Polygons and Circles (13 topics)
 - ◇ Area of a piecewise rectangular figure
 - ◇ Areas of rectangles with the same perimeter
 - ◇ Finding a side length given the perimeter and side lengths with variables
 - ◇ Finding side lengths of rectangles given one dimension and an area or a perimeter
 - ◇ Finding the dimensions of a rectangle given its perimeter and a relationship between sides
 - ◇ Area of a triangle
 - ◇ Area of a parallelogram
 - ◇ Circumference of a circle
 - ◇ Finding the radius or the diameter of a circle given its circumference
 - ◇ Circumference and area of a circle
 - ◇ Area involving rectangles and circles
 - ◇ Area between two concentric circles
 - ◇ Word problem involving the area between two concentric circles
 - ◆ Solids (11 topics)
 - ◇ Identifying solids generated by rotations of two-dimensional regions
 - ◇ Surface area of a cube or a rectangular prism
 - ◇ Surface area of a cylinder

- ◇ Surface area of a sphere
- ◇ Volume of a rectangular prism
- ◇ Volume of a pyramid
- ◇ Volume of a cylinder
- ◇ Volume of a cone
- ◇ Volume of a sphere
- ◇ Word problem involving the rate of filling or emptying a cylinder
- ◇ Ratio of volumes
- Lines and Systems of Linear Equations (72 topics)
 - ◆ The Coordinate Plane, Distance, and Midpoint (6 topics)
 - ◇ Reading a point in the coordinate plane
 - ◇ Plotting a point in the coordinate plane
 - ◇ Table for a linear equation
 - ◇ Finding a solution to a linear equation in two variables
 - ◇ Distance between two points in the plane: Decimal answers
 - ◇ Midpoint of a line segment in the plane
 - ◆ Graphing and Intercepts (8 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 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
 - ◇ Graphing a line given its x – and y –intercepts
 - ◆ Slope (3 topics)
 - ◇ Finding slope given the graph of a line on a grid
 - ◇ Finding slope given two points on a line
 - ◇ Graphing a line given its slope and y –intercept
 - ◆ Equations of Lines (8 topics)
 - ◇ 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 in slope–intercept form given the slope and a point
 - ◇ Writing the equation of a line given the y –intercept and another point
 - ◇ Writing the equation of a line through two given points
 - ◇ Finding slopes of lines parallel and perpendicular to a line given in slope–intercept form
 - ◇ Finding slopes of lines parallel and perpendicular to a line given in the form $Ax + By = C$
 - ◆ Applications (6 topics)
 - ◇ Interpreting a line graph
 - ◇ 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
 - ◇ Interpreting the parameters of a linear function that models a real–world situation
 - ◇ 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
 - ◆ Systems of Linear Equations (17 topics)
 - ◇ Identifying solutions to a system of linear equations
 - ◇ Graphically solving a system of linear equations
 - ◇ Solving a system of linear equations of the form $y = mx + b$
 - ◇ 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
- ◇ 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 value mixture problem using a system of linear equations
- ◇ Solving a distance, rate, time problem using a system of linear equations
- ◇ Introduction to solving a 3x3 system of linear equations
- ◇ Solving a 3x3 system of linear equations: Problem type 1
- ◇ Solving a 3x3 system of linear equations: Problem type 2
- ◇ Solving a word problem using a 3x3 system of linear equations: Problem type 1
- ◆ Matrices (3 topics)
 - ◇ Scalar multiplication of a matrix
 - ◇ Finding the determinant of a 2x2 matrix
 - ◇ Finding the determinant of a 3x3 matrix
- ◆ Introduction to Functions (21 topics)
 - ◇ Identifying functions from relations
 - ◇ Vertical line test
 - ◇ 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
 - ◇ Evaluating a piecewise-defined function
 - ◇ Finding an output of a function from its graph
 - ◇ Finding inputs and outputs of a function from its graph
 - ◇ Domain and range from the graph of a continuous function
 - ◇ Domain and range from the graph of a piecewise function
 - ◇ Finding intercepts of a nonlinear function given its graph
 - ◇ Finding where a function is increasing, decreasing, or constant given the graph
 - ◇ Finding where a function is increasing, decreasing, or constant given the graph: Interval notation
 - ◇ Finding local maxima and minima of a function given the graph
 - ◇ Graphing a function of the form $f(x) = ax + b$: Integer slope
 - ◇ Graphing a function of the form $f(x) = ax + b$: Fractional slope
 - ◇ Graphing a parabola of the form $y = ax^2$
 - ◇ Graphing a parabola of the form $y = ax^2 + c$
 - ◇ Graphing a function of the form $f(x) = ax^2$
 - ◇ Graphing a piecewise-defined function: Problem type 1
- Exponents, Polynomials, and Factoring (58 topics)
 - ◆ Integer Exponents (24 topics)
 - ◇ Introduction to the product rule of exponents
 - ◇ Product rule with positive exponents: Univariate
 - ◇ Product rule with positive exponents: Multivariate
 - ◇ Ordering numbers with positive exponents
 - ◇ Introduction to the power of a power rule of exponents
 - ◇ Power rules with positive exponents: Multivariate products
 - ◇ Power rules with positive exponents: Multivariate quotients
 - ◇ Power and product rules with positive exponents
 - ◇ Introduction to the quotient rule of exponents
 - ◇ 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
- ◇ Evaluating expressions with exponents of zero
- ◇ Evaluating an expression with a negative exponent: Whole number base
- ◇ Evaluating an expression with a negative exponent: Positive fraction base
- ◇ Evaluating an expression with a negative exponent: Negative integer base
- ◇ Ordering numbers 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, product, and quotient rules with negative exponents
- ◆ Scientific Notation (5 topics)
 - ◇ Scientific notation with a positive exponent
 - ◇ Scientific notation with a negative exponent
 - ◇ Converting between scientific notation and standard form in a real-world situation
 - ◇ Multiplying numbers written in scientific notation: Advanced
 - ◇ Dividing numbers written in scientific notation: Advanced
- ◆ Polynomial Expressions (9 topics)
 - ◇ Degree and leading coefficient of a univariate polynomial
 - ◇ Simplifying a sum or difference of two univariate polynomials
 - ◇ Multiplying a univariate polynomial by a monomial with a positive coefficient
 - ◇ Multiplying binomials with leading coefficients of 1
 - ◇ Multiplying binomials with leading coefficients greater than 1
 - ◇ Multiplying binomials in two variables
 - ◇ Multiplying conjugate binomials: Univariate
 - ◇ Squaring a binomial: Univariate
 - ◇ Multiplication involving binomials and trinomials in one variable
- ◆ Factoring (13 topics)
 - ◇ Introduction to the GCF of two monomials
 - ◇ Greatest common factor of two multivariate monomials
 - ◇ Factoring out a monomial from a polynomial: Univariate
 - ◇ Factoring a univariate polynomial by grouping: Problem type 1
 - ◇ Factoring a quadratic 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 perfect square trinomial with leading coefficient 1
 - ◇ Factoring a difference of squares in one variable: Basic
 - ◇ Factoring a difference of squares in one variable: Advanced
 - ◇ Factoring a product of a quadratic trinomial and a monomial
 - ◇ Dividing a polynomial by a monomial: Univariate
- ◆ Solving Quadratic Equations by Factoring (7 topics)
 - ◇ 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
 - ◇ Writing a quadratic equation given the roots and the leading coefficient
 - ◇ Solving a word problem using a quadratic equation with rational roots
- Rational Expressions (44 topics)
 - ◆ Rational Expressions (16 topics)
 - ◇ Restriction on a variable in a denominator: Linear

- ◇ Restriction on a variable in a denominator: Quadratic
- ◇ Domain of a rational function: Excluded values
- ◇ Simplifying a ratio of polynomials: Problem type 1
- ◇ Simplifying a ratio of polynomials: Problem type 2
- ◇ Multiplying rational expressions involving multivariate monomials
- ◇ Multiplying rational expressions involving quadratics with leading coefficients of 1
- ◇ Dividing rational expressions involving multivariate monomials
- ◇ Introduction to the LCM of two monomials
- ◇ Adding rational expressions with common denominators and monomial numerators
- ◇ Adding rational expressions with common denominators and binomial numerators
- ◇ Adding rational expressions with different denominators and a single occurrence of a variable
- ◇ Adding rational expressions with denominators ax and bx : Basic
- ◇ Adding rational expressions with denominators ax and bx : Advanced
- ◇ Adding rational expressions with linear denominators without common factors: Basic
- ◇ Adding rational expressions with linear denominators without common factors: Advanced
- ◆ Complex Fractions (4 topics)
 - ◇ Complex fraction without variables: Problem type 1
 - ◇ Complex fraction involving univariate monomials
 - ◇ Complex fraction involving multivariate monomials
 - ◇ Complex fraction: GCF factoring
- ◆ Rational Equations (15 topics)
 - ◇ Solving a rational equation that simplifies to linear: Denominator x
 - ◇ Solving a rational equation that simplifies to linear: Denominator $x+a$
 - ◇ Solving a rational equation that simplifies to linear: Denominators a , x , or ax
 - ◇ Solving a rational equation that simplifies to linear: Denominators ax and bx
 - ◇ Solving a rational equation that simplifies to linear: Unlike binomial denominators
 - ◇ Solving a rational equation that simplifies to quadratic: Proportional form, basic
 - ◇ Solving a rational equation that simplifies to quadratic: Denominator x
 - ◇ Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators
 - ◇ Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators
 - ◇ Solving a rational equation that simplifies to quadratic: Proportional form, advanced
 - ◇ Solving for a variable in terms of other variables in a rational equation: Problem type 1
 - ◇ Solving for a variable in terms of other variables in a rational equation: Problem type 2
 - ◇ Solving for a variable in terms of other variables in a rational equation: Problem type 3
 - ◇ Word problem involving multiple rates
 - ◇ Solving a work problem using a rational equation
- ◆ Direct and Inverse Variation (5 topics)
 - ◇ Word problem on direct variation
 - ◇ Word problem on inverse variation
 - ◇ Word problem on inverse variation involving the completion of a task
 - ◇ Writing an equation that models variation
 - ◇ Word problem on combined variation
- ◆ Rational Functions (4 topics)
 - ◇ Finding the asymptotes of a rational function: Constant over linear
 - ◇ Finding the asymptotes of a rational function: Linear over linear
 - ◇ Graphing a rational function: Constant over linear
 - ◇ Graphing a rational function: Linear over linear
- Radicals (55 topics)
 - ◆ Radical Functions (3 topics)
 - ◇ Square roots of perfect squares with signs
 - ◇ Domain of a square root function: Basic
 - ◇ Graphing a square root function: Problem type 1
 - ◆ Radical Expressions (35 topics)

- ◇ Square root of a rational perfect square
- ◇ Simplifying the square root of a whole number less than 100
- ◇ Introduction to simplifying a radical expression with an even exponent
- ◇ Square root of a perfect square monomial
- ◇ Cube root of an integer
- ◇ Simplifying a radical expression with an even exponent
- ◇ Introduction to simplifying a radical expression with an odd exponent
- ◇ Simplifying a radical expression with an odd exponent
- ◇ Simplifying a radical expression with two variables
- ◇ Simplifying a higher root of a whole number
- ◇ Introduction to simplifying a higher radical expression
- ◇ Simplifying a higher radical expression: Univariate
- ◇ Simplifying a higher radical expression: Multivariate
- ◇ Introduction to square root addition or subtraction
- ◇ Square root addition or subtraction
- ◇ Introduction to simplifying a sum or difference of radical expressions: Univariate
- ◇ Simplifying a sum or difference of radical expressions: Univariate
- ◇ Simplifying a sum or difference of radical expressions: Multivariate
- ◇ Square root multiplication: Basic
- ◇ Square root multiplication: Advanced
- ◇ Introduction to simplifying a product of radical expressions: Univariate
- ◇ Simplifying a product of radical expressions: Univariate
- ◇ Simplifying a product of radical expressions: Multivariate
- ◇ Introduction to simplifying a product of higher roots
- ◇ Simplifying a product of higher radical expressions
- ◇ Introduction to simplifying a product involving square roots using the distributive property
- ◇ Simplifying a product involving square roots using the distributive property: Advanced
- ◇ Simplifying a quotient of square roots
- ◇ Rationalizing a denominator: Quotient involving square roots
- ◇ Rationalizing a denominator: Square root of a fraction
- ◇ Rationalizing a denominator: Quotient involving a monomial
- ◇ Rationalizing a denominator using conjugates: Integer numerator
- ◇ Rationalizing a denominator using conjugates: Square root in numerator
- ◇ Rationalizing a denominator: Quotient involving a higher radical
- ◇ Rationalizing a denominator: Quotient involving higher radicals and monomials
- ◆ Rational Exponents (9 topics)
 - ◇ 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
 - ◇ Rational exponents: Product rule
 - ◇ Rational exponents: Quotient rule
 - ◇ Rational exponents: Products and quotients with negative exponents
 - ◇ Rational exponents: Power of a power rule
 - ◇ Rational exponents: Powers of powers with negative exponents
- ◆ Radical Equations (4 topics)
 - ◇ Solving a radical equation that simplifies to a linear equation: One radical, basic
 - ◇ Solving a radical equation that simplifies to a linear equation: Two radicals
 - ◇ Solving a radical equation that simplifies to a quadratic equation: One radical, basic
 - ◇ Solving a radical equation that simplifies to a quadratic equation: One radical, advanced
- ◆ Complex Numbers (4 topics)
 - ◇ Using i to rewrite square roots of negative numbers
 - ◇ Adding or subtracting complex numbers

- ◇ Multiplying complex numbers
- ◇ Simplifying a power of i
- Quadratic Functions (24 topics)
 - ◆ Quadratic Equations (9 topics)
 - ◇ Solving an equation of the form $x^2 = a$ using the square root property
 - ◇ Solving a quadratic equation using the square root property: Exact answers, basic
 - ◇ Solving a quadratic equation using the square root property: Exact answers, advanced
 - ◇ Completing the square
 - ◇ Solving a quadratic equation by completing the square: Exact answers
 - ◇ Applying the quadratic formula: Exact answers
 - ◇ Applying the quadratic formula: Decimal answers
 - ◇ Discriminant of a quadratic equation
 - ◇ Solving a word problem using a quadratic equation with irrational roots
 - ◆ Quadratic Functions (9 topics)
 - ◇ Graphing a parabola of the form $y = (x-h)^2 + k$
 - ◇ Graphing a parabola of the form $y = a(x-h)^2 + k$
 - ◇ Graphing a parabola of the form $y = x^2 + bx + c$
 - ◇ Graphing a parabola of the form $y = ax^2 + bx + c$: Integer coefficients
 - ◇ Finding the zeros of a quadratic function given its equation
 - ◇ Finding the x -intercept(s) and the vertex of a parabola
 - ◇ Rewriting a quadratic function to find its vertex and sketch its graph
 - ◇ Domain and range from the graph of a quadratic function
 - ◇ Range of a quadratic function
 - ◆ Polynomial Functions (6 topics)
 - ◇ Roots of a product of polynomials
 - ◇ Finding zeros of a polynomial function written in factored form
 - ◇ Finding x - and y -intercepts given a polynomial function
 - ◇ Determining the end behavior of the graph of a polynomial function
 - ◇ Matching graphs with polynomial functions
 - ◇ Inferring properties of a polynomial function from its graph
- Function Operations (13 topics)
 - ◆ More on Function Evaluation and Properties (2 topics)
 - ◇ Evaluating functions: Absolute value, rational, radical
 - ◇ Variable expressions as inputs of functions: Problem type 1
 - ◆ Transformations of Graphs (8 topics)
 - ◇ Translating the graph of a parabola: One step
 - ◇ Translating the graph of a parabola: Two steps
 - ◇ Writing an equation for a function after a vertical translation
 - ◇ Translating the graph of a function: One step
 - ◇ Translating the graph of a function: Two steps
 - ◇ Transforming the graph of a function by reflecting over an axis
 - ◇ Transforming the graph of a function by shrinking or stretching
 - ◇ Writing an equation for a function after a vertical and horizontal translation
 - ◆ Function Operations (3 topics)
 - ◇ Sum, difference, and product of two functions
 - ◇ Quotient of two functions: Basic
 - ◇ Introduction to the composition of two functions
- Exponential and Logarithmic Functions (17 topics)
 - ◆ Exponential Functions (7 topics)
 - ◇ Table for an exponential function
 - ◇ Graphing an exponential function and its asymptote: $f(x)=b^x$
 - ◇ Graphing an exponential function and its asymptote: $f(x) = a(b)^x$
 - ◇ Graphing an exponential function and its asymptote: $f(x) = b^{-x}$ or $f(x) = -b^x$ or $f(x) = -b^{-x}$

- ◇ Evaluating an exponential function that models a real–world situation
 - ◇ Evaluating an exponential function with base e that models a real–world situation
 - ◇ Finding a final amount in a word problem on exponential growth or decay
- ◆ Logarithmic Functions (6 topics)
 - ◇ Converting between logarithmic and exponential equations
 - ◇ Converting between natural 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
- ◆ Exponential and Logarithmic Equations and Applications (4 topics)
 - ◇ Solving an exponential equation by using natural logarithms: Decimal answers
 - ◇ Finding the time to reach a limit in a word problem on exponential growth or decay
 - ◇ Finding the final amount in a word problem on continuous compound interest
 - ◇ Finding the final amount in a word problem on continuous exponential growth or decay
- Trigonometric Functions (26 topics)
 - ◆ Radians and Unit Circle Trigonometry (10 topics)
 - ◇ Converting between degree and radian measure: Problem type 1
 - ◇ Sketching an angle with absolute value less than 2 radians in standard position
 - ◇ Coterminal angles
 - ◇ Arc length and central angle measure
 - ◇ Finding coordinates on the unit circle for special angles
 - ◇ Common angles and trigonometric functions
 - ◇ Trigonometric functions and special angles: Problem type 1
 - ◇ Trigonometric functions and special angles: Problem type 2
 - ◇ Evaluating expressions involving sine or cosine
 - ◇ Using a calculator to approximate sine, cosine, and tangent values
 - ◆ Right Triangle Trigonometry (8 topics)
 - ◇ Sine, cosine, and tangent ratios: Numbers for side lengths
 - ◇ Using the Pythagorean Theorem to find a sine, cosine, or tangent ratio in a right triangle
 - ◇ Using a trigonometric ratio to find a side length in a right triangle
 - ◇ Using trigonometry to find a length in a word problem with one right triangle
 - ◇ Using a trigonometric ratio to find an angle measure in a right triangle
 - ◇ Using trigonometry to find angles of elevation or depression in a word problem
 - ◇ Solving a right triangle
 - ◇ Using trigonometry to find a length in a word problem with two right triangles
 - ◆ Trigonometric Functions of Angles (1 topics)
 - ◇ Reference angles: Problem type 1
 - ◆ Graphs of Sine and Cosine Functions (7 topics)
 - ◇ Sketching the graph of $y = a \sin(x)$ or $y = a \cos(x)$
 - ◇ Sketching the graph of $y = \sin(bx)$ or $y = \cos(bx)$
 - ◇ Sketching the graph of $y = \sin(x+c)$ or $y = \cos(x+c)$
 - ◇ Sketching the graph of $y = a \sin(x+c)$ or $y = a \cos(x+c)$
 - ◇ Sketching the graph of $y = a \sin(bx)$ or $y = a \cos(bx)$
 - ◇ Amplitude and period of a sine or cosine function
 - ◇ Amplitude, period, and phase shift of a sine or cosine function
- Trigonometric Equations and Vectors (37 topics)
 - ◆ Trigonometric Identities (2 topics)
 - ◇ Simplifying trigonometric expressions
 - ◇ Using cofunction identities
 - ◆ Trigonometric Equations (5 topics)
 - ◇ Finding solutions in an interval for a basic trigonometric equation involving sine or cosine

- ◇ Finding solutions in an interval for a basic trigonometric equation involving tangent, cotangent, secant, or cosecant
- ◇ Finding solutions in an interval for a trigonometric equation in factored form
- ◇ Finding solutions in an interval for a trigonometric equation with a squared function: Problem type 2
- ◇ Finding solutions in an interval for a trigonometric equation using Pythagorean identities: Problem type 1
- ◆ Laws of Sines and Cosines (5 topics)
 - ◇ Solving a triangle with the law of sines: Problem type 1
 - ◇ Solving a triangle with the law of sines: Problem type 2
 - ◇ Solving a triangle with the law of cosines
 - ◇ Using trigonometry to find the area of a right triangle
 - ◇ Using trigonometry to find the area of a triangle
- ◆ Vectors (19 topics)
 - ◇ Writing a position vector in a_i+b_j form given its graph
 - ◇ Writing a vector in a_i+b_j form given its initial and terminal points
 - ◇ Writing a vector in component form given its initial and terminal points
 - ◇ Magnitude of a vector given in a_i+b_j form
 - ◇ Magnitude of a vector given in component form
 - ◇ Vector addition and scalar multiplication: a_i+b_j form
 - ◇ Linear combination of vectors: a_i+b_j form
 - ◇ Unit vectors
 - ◇ Multiplication of a vector by a scalar: Geometric approach
 - ◇ Vector addition: Geometric approach
 - ◇ Vector subtraction: Geometric approach
 - ◇ Finding the magnitude and direction of a vector given its graph
 - ◇ Finding the components of a vector given its graph
 - ◇ Finding the direction angle of a vector given in a_i+b_j form
 - ◇ Writing a vector given its magnitude and direction angle
 - ◇ Writing a vector to represent a force pushing or pulling an object
 - ◇ Finding the magnitude and direction angle of the resultant force of two vectors
 - ◇ Finding magnitudes of forces related to a sum of three vectors
 - ◇ Finding magnitudes of forces related to an object suspended by cables
- ◆ The Dot Product (6 topics)
 - ◇ Dot product of vectors given in a_i+b_j form
 - ◇ Classifying vector relationships by finding the angle between two vectors given in $a_i + b_j$ form
 - ◇ Finding the component of a vector along another vector
 - ◇ Decomposing a vector into two orthogonal vectors
 - ◇ Finding the amount of work done given a force vector and a distance
 - ◇ Finding magnitudes of forces related to an object on a ramp
- Other Topics Available(*) (366 additional topics)
 - ◆ Arithmetic (32 topics)
 - ◇ Ordering integers
 - ◇ Square root of a perfect square
 - ◇ Operations with absolute value: Problem type 2
 - ◇ Equivalent fractions
 - ◇ Using a common denominator to order fractions
 - ◇ Signed fraction addition or subtraction: Advanced
 - ◇ Fractional part of a circle
 - ◇ Determining if a quantity is increased or decreased when multiplied by a fraction
 - ◇ Signed fraction multiplication: Advanced
 - ◇ Signed fraction division

- ◇ Multiplication of a decimal by a power of 0.1
- ◇ Division of a decimal by a power of 0.1
- ◇ Evaluating a linear expression: Signed decimal addition and subtraction
- ◇ Evaluating a linear expression: Signed decimal multiplication with addition or subtraction
- ◇ 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 original amount given the result of a percentage increase or decrease
- ◇ Finding the original price given the sale price and percent discount
- ◇ Finding the percentage increase or decrease: Basic
- ◇ Finding the absolute error and percent error of a measurement
- ◇ Computing a percent mixture
- ◇ Mean of a data set
- ◇ Weighted mean: Tabular data
- ◇ Choosing metric measurement units
- ◇ Metric distance conversion with decimal values
- ◇ Metric conversion with decimal values: Two-step problem
- ◇ Converting between metric units of volume and capacity
- ◇ Converting between compound units: Basic
- ◇ Converting between compound units: Advanced
- ◇ Converting between temperatures in Fahrenheit and Celsius
- ◇ Identifying numbers as integers or non-integers
- ◇ Identifying numbers as rational or irrational
- ◆ Linear Equations and Inequalities (18 topics)
 - ◇ Solving a word problem involving rates and time conversion
 - ◇ Writing an equation of the form $A(x + B) = C$ to solve a word problem
 - ◇ Writing a multi-step equation for a real-world situation
 - ◇ Writing an equation to represent a real-world problem: Variable on both sides
 - ◇ Writing and solving a real-world problem given an equation with the variable on both sides
 - ◇ 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 word problem involving consecutive integers
 - ◇ Solving a distance, rate, time problem using a linear equation
 - ◇ Set-builder notation
 - ◇ Union and intersection of finite sets
 - ◇ Union and intersection of intervals
 - ◇ Solving a linear inequality with multiple occurrences of the variable: Problem type 3
 - ◇ Solving an absolute value equation: Problem type 3
 - ◇ Solving an absolute value equation: Problem type 4
 - ◇ Solving an absolute value equation of the form $|ax+b| = |cx+d|$
 - ◇ Solving an absolute value inequality: Problem type 1
 - ◇ Solving an absolute value inequality: Problem type 3
- ◆ Geometry (37 topics)
 - ◇ Acute, obtuse, and right angles
 - ◇ Measuring an angle with the protractor
 - ◇ Drawing an angle with the protractor
 - ◇ Finding the complement or supplement of an angle given a figure
 - ◇ Finding supplementary and complementary angles
 - ◇ Finding angle measures given two intersecting lines
 - ◇ Solving equations involving vertical angles and linear pairs
 - ◇ Finding angle measures given two parallel lines cut by a transversal
 - ◇ Solving equations involving angles and a pair of parallel lines
 - ◇ Solving equations involving angles and two pairs of parallel lines
 - ◇ Acute, obtuse, and right triangles

- ◇ Finding an angle measure for a triangle sharing a side with another triangle
- ◇ Finding an angle measure given extended triangles
- ◇ Finding an angle measure given a triangle and parallel lines
- ◇ Using the Pythagorean Theorem repeatedly
- ◇ Similar right triangles
- ◇ Indirect measurement
- ◇ Triangles and parallel lines
- ◇ Identifying similar right triangles that overlap
- ◇ Finding the perimeter or area of a rectangle given one of these values
- ◇ Area between two rectangles
- ◇ Word problem involving the area between two rectangles
- ◇ Finding lengths using scale models
- ◇ Using a scale drawing to find actual area
- ◇ Area of a trapezoid
- ◇ Finding measures involving diagonals of parallelograms
- ◇ Finding measures involving diagonals of rectangles
- ◇ Circumference ratios
- ◇ Perimeter involving rectangles and circles
- ◇ Area involving inscribed figures
- ◇ Arc length
- ◇ Area of a sector of a circle: Exact answer in terms of π
- ◇ Arc length and area of a sector of a circle
- ◇ Surface area of a triangular prism
- ◇ Volume of an oblique rectangular prism
- ◇ Volume of a triangular prism
- ◇ Computing ratios of side lengths, surface areas, and volumes for similar solids
- ◆ Lines and Systems of Linear Equations (47 topics)
 - ◇ Finding the area of a triangle or parallelogram in the coordinate plane
 - ◇ Distance between two points in the plane: Exact answers
 - ◇ Finding x - and y -intercepts of a line given the equation: Advanced
 - ◇ X - and y -intercepts of a line given the equation in standard form
 - ◇ Graphing a linear inequality in the plane: Standard form
 - ◇ Graphing a linear inequality in the plane: Vertical or horizontal line
 - ◇ Finding the slopes of horizontal and vertical lines
 - ◇ Finding the coordinate that yields a given slope
 - ◇ Using right triangles to find the slope of a line
 - ◇ Graphing a line through a given point with a given slope
 - ◇ Identifying linear equations: Advanced
 - ◇ Identifying linear functions given ordered pairs
 - ◇ Rewriting a linear equation in the form $Ax + By = C$
 - ◇ Writing an equation of a line given its slope and y -intercept
 - ◇ Finding the slope, y -intercept, and equation for a linear function given a table of values
 - ◇ Finding the slope and a point on a line given its equation in point-slope form
 - ◇ Graphing a line given its equation in point-slope form
 - ◇ Writing the equation of a line in point-slope form given the slope and a point
 - ◇ Writing the equation of a line in standard form given the slope and a point
 - ◇ Writing the equations of vertical and horizontal lines through a given point
 - ◇ Writing equations of lines parallel and perpendicular to a given line through a point
 - ◇ Finding the intercepts and rate of change given a graph of a linear function
 - ◇ Combining functions to write a new function that models a real-world situation
 - ◇ Comparing properties of linear functions given in different forms
 - ◇ Finding the coordinates of a point to make a parallelogram
 - ◇ Solving a linear equation by graphing

- ◇ Solving a 2x2 system of linear equations that is inconsistent or consistent dependent
- ◇ 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 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 3x3 system of linear equations that is inconsistent or consistent dependent
- ◇ Graphing a system of two linear inequalities: Basic
- ◇ Addition or subtraction of matrices
- ◇ Squaring and multiplying 2x2 matrices
- ◇ Multiplication of matrices: Basic
- ◇ Completing Gauss–Jordan elimination with a 2x2 matrix
- ◇ Gauss–Jordan elimination with a 2x2 matrix
- ◇ Writing solutions to 3x3 systems of linear equations from augmented matrices
- ◇ Completing Gauss–Jordan elimination with a 3x3 matrix
- ◇ Domain and range from ordered pairs
- ◇ Finding the absolute maximum and minimum of a function given the graph
- ◇ Finding values and intervals where the graph of a function is zero, positive, or negative
- ◇ Graphing an absolute value equation of the form $y = A|x|$
- ◇ Graphing an absolute value equation in the plane: Advanced
- ◇ Graphing a function of the form $f(x) = ax^2 + c$
- ◇ Graphing a cubic function of the form $y = ax^3$
- ◆ Exponents, Polynomials, and Factoring (24 topics)
 - ◇ 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
 - ◇ Multiplying numbers written in decimal form or scientific notation in a real–world situation
 - ◇ Finding the scale factor between numbers given in scientific notation in a real–world situation
 - ◇ Degree of a multivariate polynomial
 - ◇ 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 negative coefficient
 - ◇ Multiplying a multivariate polynomial by a monomial
 - ◇ Squaring a binomial: Multivariate
 - ◇ Multiplying binomials with negative coefficients
 - ◇ Multiplication involving binomials and trinomials in two variables
 - ◇ Factoring out a monomial from a polynomial: Multivariate
 - ◇ Factoring a univariate polynomial by grouping: Problem type 2
 - ◇ Factoring a quadratic with a negative leading coefficient
 - ◇ 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 two variables
 - ◇ Factoring with repeated use of the difference of squares formula
 - ◇ Factoring a sum or difference of two cubes
 - ◇ Polynomial long division: Problem type 1
 - ◇ Polynomial long division: Problem type 2
 - ◇ Using the Pythagorean Theorem and a quadratic equation to find side lengths of a right triangle
- ◆ Rational Expressions (22 topics)
 - ◇ Simplifying a ratio of multivariate polynomials
 - ◇ Ordering fractions with variables
 - ◇ Dividing rational expressions involving quadratics with leading coefficients of 1
 - ◇ Least common multiple of two monomials
 - ◇ Adding rational expressions with multivariate monomial denominators: Advanced
 - ◇ Complex fraction without variables: Problem type 2

- ◇ Complex fraction: Quadratic factoring
- ◇ Complex fraction made of sums involving rational expressions: Problem type 1
- ◇ Complex fraction made of sums involving rational expressions: Problem type 2
- ◇ Complex fraction made of sums involving rational expressions: Problem type 3
- ◇ Solving a distance, rate, time problem using a rational equation
- ◇ Writing a direct variation equation
- ◇ Writing an inverse variation equation
- ◇ Introduction to partial fraction decomposition with distinct linear factors
- ◇ Partial fraction decomposition with distinct linear factors
- ◇ Partial fraction decomposition with repeated linear factors
- ◇ Partial fraction decomposition with an irreducible quadratic factor
- ◇ Finding horizontal and vertical asymptotes of a rational function: Quadratic numerator or denominator
- ◇ Finding the asymptotes of a rational function: Quadratic over linear
- ◇ Graphing a rational function: Quadratic over linear
- ◇ Graphing rational functions with holes
- ◇ Matching graphs with rational functions: Two vertical asymptotes
- ◆ Radicals (18 topics)
 - ◇ Domain of a square root function: Advanced
 - ◇ Graphing a square root function: Problem type 2
 - ◇ Matching parent graphs with their equations
 - ◇ Simplifying a product of radical expressions: Multivariate, fractional expressions
 - ◇ Special products of radical expressions: Conjugates and squaring
 - ◇ Simplifying products or quotients of higher radicals with different indices: Univariate
 - ◇ Simplifying products or quotients of higher radicals with different indices: Multivariate
 - ◇ Solving a radical equation that simplifies to a linear equation: One radical, advanced
 - ◇ Solving a radical equation with a quadratic expression under the radical
 - ◇ Solving for a variable in terms of other variables in an equation involving radicals
 - ◇ Word problem involving radical equations: Basic
 - ◇ Word problem involving radical equations: Advanced
 - ◇ Solving an equation with a root index greater than 2: Problem type 1
 - ◇ Solving an equation with a root index greater than 2: Problem type 2
 - ◇ Solving an equation with exponent $1/a$: Problem type 1
 - ◇ Solving an equation with exponent $1/a$: Problem type 2
 - ◇ Simplifying a product and quotient involving square roots of negative numbers
 - ◇ Dividing complex numbers
- ◆ Quadratic Functions (39 topics)
 - ◇ Solving a quadratic equation with complex roots
 - ◇ Solving an equation that can be written in quadratic form: Problem type 1
 - ◇ Solving an equation that can be written in quadratic form: Problem type 2
 - ◇ Solving an equation using the odd–root property: Problem type 1
 - ◇ Solving a quadratic inequality written in factored form
 - ◇ Solving a quadratic inequality
 - ◇ Graphing a parabola of the form $y = ax^2 + bx + c$: Rational coefficients
 - ◇ Finding the maximum or minimum of a quadratic function
 - ◇ Word problem involving the maximum or minimum of a quadratic function
 - ◇ Word problem involving optimizing area by using a quadratic function
 - ◇ Writing the equation of a quadratic function given its graph
 - ◇ Solving a quadratic equation by graphing
 - ◇ Classifying the graph of a function
 - ◇ Graphically solving a system of linear and quadratic equations
 - ◇ Solving a system of linear and quadratic equations
 - ◇ Solving a system of nonlinear equations: Problem type 1

- ◇ Solving a word problem involving geometry using a system of nonlinear equations
- ◇ Finding zeros and their multiplicities given a polynomial function written in factored form
- ◇ Finding a polynomial of a given degree with given zeros: Real zeros
- ◇ Determining end behavior and intercepts to graph a polynomial function
- ◇ Using a graphing calculator to solve a word problem involving a local extremum of a polynomial function
- ◇ Graphing a parabola of the form $y^2 = ax$ or $x^2 = ay$
- ◇ Graphing a parabola of the form $x = a(y-k)^2 + h$ or $y = a(x-h)^2 + k$
- ◇ Graphing a parabola of the form $ay^2 + by + cx + d = 0$ or $ax^2 + bx + cy + d = 0$
- ◇ Identifying the center and radius to graph a circle given its equation in standard form
- ◇ Identifying the center and radius to graph a circle given its equation in general form: Basic
- ◇ Identifying the center and radius to graph a circle given its equation in general form: Advanced
- ◇ Writing the equation of a circle centered at the origin given its radius or a point on the circle
- ◇ Writing an equation of a circle and identifying points that lie on the circle
- ◇ Writing an equation of a circle given its center and radius or diameter
- ◇ Deriving the equation of a circle using the Pythagorean Theorem
- ◇ Writing an equation of a circle given its center and a point on the circle
- ◇ Writing an equation of a circle given the endpoints of a diameter
- ◇ Graphing an ellipse given its equation in standard form
- ◇ Graphing an ellipse centered at the origin: $Ax^2 + By^2 = C$
- ◇ Writing an equation of an ellipse given the center, an endpoint of an axis, and the length of the other axis
- ◇ Word problem involving an ellipse
- ◇ Graphing a hyperbola given its equation in standard form
- ◇ Graphing a hyperbola centered at the origin: $Ax^2 + By^2 = C$
- ◆ Function Operations (15 topics)
 - ◇ Variable expressions as inputs of functions: Problem type 2
 - ◇ Even and odd functions: Problem type 1
 - ◇ Even and odd functions: Problem type 2
 - ◇ Finding the average rate of change of a function
 - ◇ Finding the average rate of change of a function given its graph
 - ◇ Word problem involving average rate of change
 - ◇ How the leading coefficient affects the shape of a parabola
 - ◇ Transforming the graph of a quadratic, cubic, square root, or absolute value function
 - ◇ Composition of two functions: Basic
 - ◇ Composition of two functions: Advanced
 - ◇ Word problem involving composition of two functions
 - ◇ Horizontal line test
 - ◇ Determining whether two functions are inverses of each other
 - ◇ Inverse functions: Linear, discrete
 - ◇ Inverse functions: Rational
- ◆ Exponential and Logarithmic Functions (28 topics)
 - ◇ Translating the graph of an exponential function
 - ◇ Graphing an exponential function and finding its domain and range
 - ◇ Graphing an exponential function and its asymptote: $f(x) = a(e)^{x-b} + c$
 - ◇ Finding the initial amount and rate of change given an exponential function
 - ◇ Translating the graph of a logarithmic function
 - ◇ Graphing a logarithmic function and finding its domain and range
 - ◇ Graphing a logarithmic function: Advanced
 - ◇ Using properties of logarithms to evaluate expressions
 - ◇ Expanding a logarithmic expression: Problem type 1
 - ◇ Expanding a logarithmic expression: Problem type 2
 - ◇ Writing an expression as a single logarithm

- ◇ Change of base for logarithms: Problem type 1
- ◇ Change of base for logarithms: Problem type 2
- ◇ 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 a multi-step equation involving natural logarithms
- ◇ Solving an equation involving logarithms on both sides: Problem type 1
- ◇ Solving an equation involving logarithms on both sides: Problem type 2
- ◇ Solving an exponential equation by finding common bases: Linear exponents
- ◇ Solving an exponential equation by using logarithms: Decimal answers, basic
- ◇ Solving an exponential equation by using logarithms: Decimal answers, advanced
- ◇ Solving an exponential equation by using logarithms: Exact answers in logarithmic form
- ◇ Solving an exponential equation by using substitution and quadratic factoring
- ◇ Finding the time given an exponential function with base e that models a real-world situation
- ◇ Finding the rate or time in a word problem on continuous exponential growth or decay
- ◇ Finding half-life or doubling time
- ◇ Writing and evaluating a function modeling continuous exponential growth or decay given doubling time or half-life
- ◇ Writing and evaluating a function modeling continuous exponential growth or decay given two outputs
- ◆ Trigonometric Functions (30 topics)
 - ◇ Converting between degree and radian measure: Problem type 2
 - ◇ Area of a sector of a circle
 - ◇ Angular and linear speed
 - ◇ Trigonometric functions and special angles: Problem type 3
 - ◇ Odd and even identities for trigonometric functions
 - ◇ Evaluating a sinusoidal function that models a real-world situation
 - ◇ Sine, cosine, and tangent ratios: Variables for side lengths
 - ◇ Understanding trigonometric ratios through similar right triangles
 - ◇ Relationship between the sines and cosines of complementary angles
 - ◇ Using similar right triangles to find trigonometric ratios
 - ◇ Finding values of trigonometric functions given information about an angle: Problem type 1
 - ◇ Finding values of trigonometric functions given information about an angle: Problem type 2
 - ◇ Finding values of trigonometric functions given information about an angle: Problem type 3
 - ◇ Finding values of trigonometric functions given information about an angle: Problem type 4
 - ◇ Sketching the graph of $y = \sin(x) + d$ or $y = \cos(x) + d$
 - ◇ Sketching the graph of $y = a \sin(bx+c)$ or $y = a \cos(bx+c)$
 - ◇ Sketching the graph of $y = a \sin(bx) + d$ or $y = a \cos(bx) + d$
 - ◇ Writing the equation of a sine or cosine function given its graph: Problem type 1
 - ◇ Writing the equation of a sine or cosine function given its graph: Problem type 2
 - ◇ Word problem involving a sine or cosine function: Problem type 1
 - ◇ Sketching a graph of a damped sine or cosine function
 - ◇ Values of inverse trigonometric functions
 - ◇ Composition of a trigonometric function with its inverse trigonometric function: Problem type 1
 - ◇ Composition of a trigonometric function with its inverse trigonometric function: Problem type 2
 - ◇ Composition of a trigonometric function with the inverse of another trigonometric function: Problem type 1
 - ◇ Composition of a trigonometric function with the inverse of another trigonometric function: Problem type 2
 - ◇ Composition of a trigonometric function with the inverse of another trigonometric function: Problem type 3
 - ◇ Composition of trigonometric functions with variable expressions as inputs: Problem type 1
 - ◇ Composition of trigonometric functions with variable expressions as inputs: Problem type 2
 - ◇ Using a calculator to approximate inverse trigonometric values

- ◆ Trigonometric Equations and Vectors (41 topics)
 - ◇ Sum and difference identities: Problem type 1
 - ◇ Sum and difference identities: Problem type 2
 - ◇ Double–angle identities: Problem type 1
 - ◇ Double–angle identities: Problem type 2
 - ◇ Finding solutions in an interval for a basic trigonometric equation using a calculator
 - ◇ Solving a trigonometric equation modeling a real–world situation
 - ◇ Solving a basic trigonometric equation involving sine or cosine
 - ◇ Solving a basic trigonometric equation involving tangent, cotangent, secant, or cosecant
 - ◇ Finding solutions in an interval for a trigonometric equation involving a squared function: Problem type 1
 - ◇ Finding solutions in an interval for a trigonometric equation using Pythagorean identities: Problem type 2
 - ◇ Finding solutions in an interval for a trigonometric equation involving sine and/or cosine using double–angle identities
 - ◇ Solving a trigonometric equation involving an angle multiplied by a constant
 - ◇ Finding solutions in an interval for a trigonometric equation with an angle multiplied by a constant
 - ◇ Solving a word problem using the law of sines
 - ◇ Solving a word problem using the law of cosines
 - ◇ Translation of a vector
 - ◇ Vector addition and scalar multiplication: Component form
 - ◇ Linear combination of vectors: Component form
 - ◇ Dot product of vectors given in component form
 - ◇ Finding the angle between two vectors given in component form
 - ◇ Using the dot product to find perpendicular vectors
 - ◇ Plotting points in polar coordinates
 - ◇ Multiple representations of polar coordinates
 - ◇ Converting rectangular coordinates to polar coordinates: Special angles
 - ◇ Converting rectangular coordinates to polar coordinates: Decimal answers
 - ◇ Converting polar coordinates to rectangular coordinates
 - ◇ Converting an equation written in rectangular form to one written in polar form
 - ◇ Converting an equation written in polar form to one written in rectangular form: Problem type 1
 - ◇ Converting an equation written in polar form to one written in rectangular form: Problem type 2
 - ◇ Graphing a polar equation: Basic
 - ◇ Graphing a polar equation: Circle
 - ◇ Completing a table and choosing a graph given a pair of parametric equations
 - ◇ Writing the equation of a line and sketching its graph given its parametric equations
 - ◇ Writing the equation of a parabola and sketching its graph given its parametric equations
 - ◇ Writing the equation of a circle or ellipse and sketching its graph given its parametric equations
 - ◇ Graphing a pair of parametric equations with a restricted domain: Line or parabola
 - ◇ Graphing a pair of parametric equations with a restricted domain: Circle
 - ◇ Graphing a pair of parametric equations with a restricted domain: Ellipse
 - ◇ Completing pairs of parametric equations
 - ◇ Word problem involving parametric equations for projectile motion: Problem type 1
 - ◇ Word problem involving parametric equations for projectile motion: Problem type 2
- ◆ Limits and Continuity (15 topics)
 - ◇ Estimating a limit numerically
 - ◇ Finding limits from a graph
 - ◇ Finding a limit by using the limit laws: Problem type 1
 - ◇ Finding limits for a piecewise–defined function
 - ◇ Finding a limit by using the limit laws: Problem type 2
 - ◇ Finding a limit by using the limit laws: Problem type 3
 - ◇ Squeeze Theorem

- ◇ Determining points of discontinuity from a graph
- ◇ Determining a parameter to make a function continuous
- ◇ Limits at infinity and graphs
- ◇ Limits at infinity and rational functions
- ◇ Infinite limits and graphs
- ◇ Infinite limits and rational functions
- ◇ Finding a limit of a trigonometric function by using continuity
- ◇ Finding a limit by using special trigonometric limits

***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.*