



Prep for Calculus with Limits

This course covers the topics outlined below. You can customize the scope and sequence of this course to meet your curricular needs.

Curriculum (296 topics + 110 additional topics)

- Real Numbers (27 topics)
 - ◆ Fractions (5 topics)
 - ◇ Simplifying a fraction
 - ◇ Using a common denominator to order fractions
 - ◇ Addition or subtraction of fractions with different denominators
 - ◇ Fraction multiplication
 - ◇ Fraction division
 - ◆ Percents and Proportions (7 topics)
 - ◇ Converting between percentages and decimals
 - ◇ Applying the percent equation
 - ◇ Finding the sale price without a calculator given the original price and percent discount
 - ◇ Finding the original price given the sale price and percent discount
 - ◇ Solving a proportion of the form $x/a = b/c$
 - ◇ Word problem on proportions: Problem type 1
 - ◇ Word problem on proportions: Problem type 2
 - ◆ Signed Numbers (15 topics)
 - ◇ Integer addition: Problem type 2
 - ◇ Integer subtraction: Problem type 3
 - ◇ Signed fraction addition or subtraction: Basic
 - ◇ Signed fraction addition or subtraction: Advanced
 - ◇ Signed decimal addition and subtraction with 3 numbers
 - ◇ Integer multiplication and division
 - ◇ Signed fraction multiplication: Basic
 - ◇ Signed fraction multiplication: Advanced
 - ◇ Exponents and integers: Problem type 1
 - ◇ Exponents and signed fractions
 - ◇ Order of operations with integers and exponents
 - ◇ Evaluating a linear expression: Integer multiplication with addition or subtraction
 - ◇ Evaluating a quadratic expression: Integers
 - ◇ Absolute value of a number
 - ◇ Operations with absolute value: Problem type 2
- Equations and Inequalities (24 topics)
 - ◆ Linear Equations (15 topics)
 - ◇ Additive property of equality with integers
 - ◇ Multiplicative property of equality with signed fractions
 - ◇ Solving a two–step equation with integers
 - ◇ Solving a two–step equation with signed fractions
 - ◇ 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

- fractional coefficients
- ◊ Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution
- ◊ Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions
- ◊ Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators
- ◊ Solving equations with zero, one, or infinitely many solutions
- ◊ Algebraic symbol manipulation: Problem type 1
- ◊ Algebraic symbol manipulation: Problem type 2
- ◊ Solving a word problem with two unknowns using a linear equation
- ◊ Solving a decimal word problem using a linear equation of the form $Ax + B = C$
- ◊ Solving a value mixture problem using a linear equation
- ◆ Linear Inequalities (6 topics)
 - ◊ Solving a linear inequality: Problem type 2
 - ◊ Solving a linear inequality: Problem type 3
 - ◊ Solving a linear inequality: Problem type 4
 - ◊ Graphing a compound inequality on the number line
 - ◊ Solving a compound linear inequality: Graph solution, basic
 - ◊ Solving a compound linear inequality: Interval notation
- ◆ Absolute Value Equations and Inequalities (3 topics)
 - ◊ Solving an absolute value equation of the form $a|x| = b$ or $|x|+a = b$
 - ◊ Solving an absolute value equation of the form $|ax+b| = c$
 - ◊ Solving an absolute value inequality: Basic
- Exponents and Polynomials (43 topics)
 - ◆ Properties of Exponents (13 topics)
 - ◊ Evaluating an expression with a negative exponent: Positive fraction base
 - ◊ Evaluating an expression with a negative exponent: Negative integer base
 - ◊ Introduction to the product rule of exponents
 - ◊ Product rule with positive exponents: Multivariate
 - ◊ Product rule with negative exponents
 - ◊ Quotient of expressions involving exponents
 - ◊ Quotient rule with negative exponents: Problem type 1
 - ◊ Introduction to the power rules of exponents
 - ◊ Power rules with positive exponents
 - ◊ Power of a power rule with negative exponents
 - ◊ Power rules with negative exponents
 - ◊ Power and product rules with positive exponents
 - ◊ Power, product, and quotient rules with negative exponents
 - ◆ Scientific Notation (2 topics)
 - ◊ Scientific notation with positive exponent
 - ◊ Scientific notation with negative exponent
 - ◆ Polynomial Expressions (9 topics)
 - ◊ Degree and leading coefficient of a univariate polynomial
 - ◊ Combining like terms: Advanced
 - ◊ Simplifying a sum or difference of two univariate polynomials
 - ◊ Multiplying a univariate polynomial by a monomial with a positive coefficient
 - ◊ Multiplying a multivariate polynomial by a monomial
 - ◊ Multiplying binomials with leading coefficients of 1
 - ◊ Multiplying conjugate binomials: Univariate
 - ◊ Squaring a binomial: Univariate
 - ◊ Multiplication involving binomials and trinomials in two variables
 - ◆ Factoring (9 topics)

- ◇ Introduction to the GCF of two monomials
- ◇ Greatest common factor of two multivariate monomials
- ◇ Factoring out a monomial from a polynomial: Univariate
- ◇ Factoring out a monomial from a polynomial: Multivariate
- ◇ Factoring a quadratic with leading coefficient 1
- ◇ Factoring a quadratic with leading coefficient greater than 1
- ◇ Factoring a product of a quadratic trinomial and a monomial
- ◇ Factoring a difference of squares
- ◇ Factoring a polynomial by grouping: Problem type 1
- ◆ Quadratic Equations (10 topics)
 - ◇ Solving an equation written in factored form
 - ◇ Finding the roots of a quadratic equation with leading coefficient 1
 - ◇ Finding the roots of a quadratic equation with leading coefficient greater than 1
 - ◇ Solving a quadratic equation needing simplification
 - ◇ Solving a quadratic equation using the square root property: Exact answers, basic
 - ◇ Completing the square
 - ◇ Applying the quadratic formula: Exact answers
 - ◇ Solving a word problem using a quadratic equation with rational roots
 - ◇ Solving a word problem using a quadratic equation with irrational roots
 - ◇ Solving a quadratic inequality written in factored form
- Lines and Systems (30 topics)
 - ◆ Ordered Pairs (2 topics)
 - ◇ Plotting a point in the coordinate plane
 - ◇ Finding a solution to a linear equation in two variables
 - ◆ Graphing Lines (5 topics)
 - ◇ Graphing a line given its x- and y-intercepts
 - ◇ Graphing a line given its equation in slope-intercept form
 - ◇ Graphing a line given its equation in standard form
 - ◇ Graphing a line through a given point with a given slope
 - ◇ Graphing a vertical or horizontal line
 - ◆ Equations of Lines (13 topics)
 - ◇ Finding the y-intercept of a line given its equation
 - ◇ Finding x- and y-intercepts of a line given the equation: Advanced
 - ◇ Finding slope given the graph of a line on a grid
 - ◇ Finding slope given two points on the line
 - ◇ Finding the slope of a line given its equation
 - ◇ Writing an equation of a line given the y-intercept and another point
 - ◇ Writing the equation of a line given the slope and a point on the line
 - ◇ Writing the equation of the line through two given points
 - ◇ Finding slopes of lines parallel and perpendicular to a line given in the form $Ax + By = C$
 - ◇ Writing equations of lines parallel and perpendicular to a given line through a point
 - ◇ Writing an equation and drawing its graph to model a real-world situation: Advanced
 - ◇ 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
 - ◆ Graphing Linear Inequalities (2 topics)
 - ◇ Graphing a linear inequality in the plane: Standard form
 - ◇ Graphing a linear inequality in the plane: Vertical or horizontal line
 - ◆ Systems of Linear Equations (8 topics)
 - ◇ Graphically solving a system of linear equations
 - ◇ Solving a system of linear equations using substitution
 - ◇ Solving a system of linear equations using elimination with multiplication and addition
 - ◇ 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
- ◇ Solving a percent mixture problem using a system of linear equations
- ◇ Interpreting the graphs of two functions
- Functions and Graphs (34 topics)
 - ◆ Sets, Relations, and Functions (10 topics)
 - ◇ Union and intersection of finite sets
 - ◇ Set-builder and interval notation
 - ◇ Union and intersection of intervals
 - ◇ Identifying functions from relations
 - ◇ Vertical line test
 - ◇ Evaluating functions: Linear and quadratic or cubic
 - ◇ Evaluating functions: Absolute value, rational, radical
 - ◇ Evaluating a piecewise-defined function
 - ◇ Variable expressions as inputs of functions: Problem type 1
 - ◇ Domain and range from ordered pairs
 - ◆ Graphs and Transformations (16 topics)
 - ◇ Finding intercepts of a nonlinear function given its graph
 - ◇ Finding local maxima and minima of a function given the graph
 - ◇ Domain and range from the graph of a continuous function
 - ◇ Writing an equation for a function after a vertical translation
 - ◇ Writing an equation for a function after a vertical and horizontal 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
 - ◇ Finding the x-intercept(s) and the vertex of a parabola
 - ◇ Graphing a parabola of the form $y = ax^2$
 - ◇ Graphing a parabola of the form $y = (x-h)^2 + k$
 - ◇ Graphing a parabola of the form $y = ax^2 + bx + c$: Integer coefficients
 - ◇ Rewriting a quadratic function to find the vertex of its graph
 - ◇ Graphing a cubic function of the form $y = ax^3$
 - ◇ Graphing an absolute value equation in the plane: Advanced
 - ◆ Polynomial Functions (2 topics)
 - ◇ Finding zeros of a polynomial function written in factored form
 - ◇ Finding x- and y-intercepts given a polynomial function
 - ◆ Combining Functions; Composite Functions; Inverse Functions (6 topics)
 - ◇ Sum, difference, and product of two functions
 - ◇ Quotient of two functions: Basic
 - ◇ Composition of two functions: Basic
 - ◇ Composition of two functions: Advanced
 - ◇ Inverse functions: Linear, discrete
 - ◇ Inverse functions: Rational
- Rational Expressions (30 topics)
 - ◆ Rational Expressions (20 topics)
 - ◇ Domain of a rational function: Excluded values
 - ◇ Simplifying a ratio of polynomials: Problem type 1
 - ◇ Simplifying a ratio of polynomials: Problem type 2
 - ◇ Simplifying a ratio of multivariate polynomials
 - ◇ 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

- ◇ Least common multiple of two monomials
- ◇ Adding rational expressions with common denominators and binomial numerators
- ◇ Adding rational expressions with different denominators: ax , bx
- ◇ Adding rational expressions with multivariate monomial denominators: Advanced
- ◇ Adding rational expressions with different denominators: $x+a$, $x+b$
- ◇ Complex fraction without variables: Problem type 1
- ◇ Complex fraction without variables: Problem type 2
- ◇ Complex fraction involving multivariate monomials
- ◇ Complex fraction: GCF and quadratic factoring
- ◇ Dividing a polynomial by a monomial: Univariate
- ◇ Polynomial long division: Problem type 1
- ◇ Polynomial long division: Problem type 2
- ◆ Rational Equations (6 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: Unlike binomial denominators
 - ◇ Solving a rational equation that simplifies to linear: Denominators a , x , or ax
 - ◇ Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators
 - ◇ Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators
- ◆ Applications of Rational Expressions (2 topics)
 - ◇ Word problem on direct variation
 - ◇ Word problem on inverse variation
- ◆ Rational Functions (2 topics)
 - ◇ Sketching the graph of a rational function: Constant over linear
 - ◇ Sketching the graph of a rational function: Linear over linear
- Radical Expressions (26 topics)
 - ◆ Radical Functions (2 topics)
 - ◇ Domain of a square root function: Advanced
 - ◇ Graphing a square root function
 - ◆ Radical Expressions (15 topics)
 - ◇ Square root of a rational perfect square
 - ◇ Cube root of an integer
 - ◇ Simplifying the square root of a whole number less than 100
 - ◇ Square root of a perfect square monomial
 - ◇ Simplifying a radical expression with an even exponent
 - ◇ Simplifying a radical expression with two variables
 - ◇ Simplifying a higher root of a whole number
 - ◇ Simplifying a higher radical expression: Multivariate
 - ◇ Square root addition or subtraction
 - ◇ Simplifying a sum or difference of radical expressions: Multivariate
 - ◇ Square root multiplication: Advanced
 - ◇ Simplifying a product of radical expressions: Multivariate
 - ◇ Simplifying a product involving square roots using the distributive property: Advanced
 - ◇ Rationalizing the denominator of a radical expression
 - ◇ Rationalizing the denominator of a radical expression using conjugates
 - ◆ Higher Roots and Rational Exponents (5 topics)
 - ◇ Converting between radical form and exponent form
 - ◇ Rational exponents: Non-unit fraction exponent with a whole number base
 - ◇ Rational exponents: Negative exponents and fractional bases
 - ◇ Rational exponents: Products and quotients with negative exponents
 - ◇ Rational exponents: Powers of powers with negative exponents
 - ◆ 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
- ◇ Solving an equation using the odd–root property: Problem type 1
- Exponentials and Logarithms (20 topics)
 - ◆ Properties of Logarithms (7 topics)
 - ◇ Converting between logarithmic and exponential equations
 - ◇ Converting between natural logarithmic and exponential equations
 - ◇ Evaluating a logarithmic expression
 - ◇ Basic properties of logarithms
 - ◇ Expanding a logarithmic expression: Problem type 1
 - ◇ Writing an expression as a single logarithm
 - ◇ Change of base for logarithms: Problem type 1
 - ◆ Logarithmic and Exponential Equations (6 topics)
 - ◇ Solving an equation of the form $\log_b a = c$
 - ◇ Solving a multi–step equation involving a single logarithm
 - ◇ Solving a multi–step equation involving natural logarithms
 - ◇ Solving an equation involving logarithms on both sides: Problem type 2
 - ◇ Solving an exponential equation by using logarithms: Exact answers in logarithmic form
 - ◇ Solving exponential equations by using logarithms and natural logarithms: Decimal answers
 - ◆ Applications with Exponential Equations (3 topics)
 - ◇ 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 time to reach a limit in a word problem on exponential growth or decay
 - ◆ Exponential and Logarithmic Functions (4 topics)
 - ◇ Graphing an exponential function and its asymptote: $f(x) = a(b)^x$
 - ◇ The graph, domain, and range of an exponential function
 - ◇ The graph, domain, and range of a logarithmic function
 - ◇ Translating the graph of a logarithmic or exponential function
- Geometry (20 topics)
 - ◆ Perimeter, Area, and Volume (16 topics)
 - ◇ Perimeter of a square or a rectangle
 - ◇ Area of a square or a rectangle
 - ◇ Area of a piecewise rectangular figure
 - ◇ Finding the side length of a rectangle given its perimeter or area
 - ◇ Finding the perimeter or area of a rectangle given one of these values
 - ◇ Area of a parallelogram
 - ◇ Area of a triangle
 - ◇ Circumference and area of a circle
 - ◇ Perimeter involving rectangles and circles
 - ◇ Area involving inscribed figures
 - ◇ Volume of a rectangular prism
 - ◇ Volume of a cylinder
 - ◇ Surface area of a cube or a rectangular prism
 - ◇ Surface area of a cylinder: Exact answers in terms of pi
 - ◇ Similar polygons
 - ◇ Indirect measurement
 - ◆ Coordinate Geometry (4 topics)
 - ◇ Pythagorean Theorem
 - ◇ Distance between two points in the plane: Exact answers
 - ◇ Graphing a circle given its equation in standard form
 - ◇ Graphing a circle given its equation in general form
- Trigonometry (27 topics)
 - ◆ Angles on the Unit Circle (5 topics)

- ◇ Converting between degree and radian measure: Problem type 1
- ◇ Sketching an angle in standard position
- ◇ Reference angles: Problem type 1
- ◇ Coterminal angles
- ◇ Arc length and central angle measure
- ◆ Right Triangle Trigonometry (7 topics)
 - ◇ Sine, cosine, and tangent ratios: Variables for side lengths
 - ◇ Using a trigonometric ratio to find a side length in a right triangle
 - ◇ Using a trigonometric ratio to find an angle measure in a right triangle
 - ◇ Finding trigonometric ratios given a right triangle
 - ◇ Solving a right triangle
 - ◇ Solving a triangle with the law of sines: Problem type 1
 - ◇ Solving a triangle with the law of cosines
- ◆ Unit Circle Trigonometry (7 topics)
 - ◇ Finding coordinates on the unit circle for special angles
 - ◇ Trigonometric functions and special angles: Problem type 1
 - ◇ Trigonometric functions and special angles: Problem type 2
 - ◇ Trigonometric functions and special angles: Problem type 3
 - ◇ 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
- ◆ Graphing Trigonometric Functions (2 topics)
 - ◇ Sketching the graph of $y = a \sin(x+c)$ or $y = a \cos(x+c)$
 - ◇ Sketching the graph of $y = a \sin(bx)$ or $y = a \cos(bx)$
- ◆ Inverse Trigonometric Functions (1 topics)
 - ◇ Values of inverse trigonometric functions
- ◆ Trigonometric Identities (1 topics)
 - ◇ Simplifying trigonometric expressions
- ◆ Trigonometric Equations (4 topics)
 - ◇ Finding solutions in an interval for a basic equation involving sine or cosine
 - ◇ Finding solutions in an interval for a basic tangent, cotangent, secant, or cosecant equation
 - ◇ Finding solutions in an interval for a trigonometric equation using Pythagorean identities: Problem type 1
 - ◇ Solving a basic trigonometric equation involving sine or cosine
- Limits and Continuity (15 topics)
 - ◆ Introduction to Limits (2 topics)
 - ◇ Estimating a limit numerically
 - ◇ Finding limits from a graph
 - ◆ Computing Limits Algebraically (5 topics)
 - ◇ Finding limits for a piecewise-defined function
 - ◇ Finding a limit by using the limit laws: Problem type 1
 - ◇ Finding a limit by using the limit laws: Problem type 2
 - ◇ Finding a limit by using the limit laws: Problem type 3
 - ◇ Squeeze Theorem
 - ◆ Continuity (2 topics)
 - ◇ Determining points of discontinuity from a graph
 - ◇ Determining a parameter to make a function continuous
 - ◆ Limits Involving Infinity (4 topics)
 - ◇ Limits at infinity and graphs
 - ◇ Limits at infinity and rational functions
 - ◇ Infinite limits and graphs
 - ◇ Infinite limits and rational functions
 - ◆ Limits of Trigonometric Functions (2 topics)

- ◇ Finding a limit of a trigonometric function by using continuity
- ◇ Finding a limit by using special trigonometric limits
- Other Topics Available(*) (110 additional topics)
 - ◆ Real Numbers (8 topics)
 - ◇ Fractional part of a circle
 - ◇ Finding the percentage increase or decrease: Advanced
 - ◇ Word problem on unit rates associated with ratios of whole numbers: Decimal answers
 - ◇ Exponents and integers: Problem type 2
 - ◇ Identifying numbers as integers or non-integers
 - ◇ Identifying numbers as rational or irrational
 - ◇ Properties of addition
 - ◇ Properties of real numbers
 - ◆ Equations and Inequalities (7 topics)
 - ◇ Solving an equation to find the value of an expression
 - ◇ Solving a decimal word problem using a linear equation with the variable on both sides
 - ◇ Solving a fraction word problem using a linear equation with the variable on both sides
 - ◇ 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
 - ◇ Solving an absolute value equation of the form $|ax+b| = |cx+d|$
 - ◆ Exponents and Polynomials (14 topics)
 - ◇ Evaluating expressions with exponents of zero
 - ◇ Ordering numbers with positive exponents
 - ◇ Ordering numbers with negative exponents
 - ◇ Multiplying and dividing numbers written in scientific notation
 - ◇ Degree of a multivariate polynomial
 - ◇ Simplifying a sum or difference of three univariate polynomials
 - ◇ Factoring with repeated use of the difference of squares formula
 - ◇ Factoring a sum or difference of two cubes
 - ◇ Solving an equation that can be written in quadratic form: Problem type 1
 - ◇ Solving a quadratic equation using the square root property: Exact answers, advanced
 - ◇ Solving a quadratic equation by completing the square: Exact answers
 - ◇ Discriminant of a quadratic equation
 - ◇ Writing a quadratic equation given the roots and the leading coefficient
 - ◇ Solving a quadratic inequality
 - ◆ Lines and Systems (7 topics)
 - ◇ Determining whether given points lie on one, both, or neither of 2 lines given equations
 - ◇ Writing the equations of vertical and horizontal lines through a given point
 - ◇ Solving a 3x3 system of linear equations: Problem type 1
 - ◇ Solving a 2x2 system of linear equations that is inconsistent or consistent dependent
 - ◇ Solving a tax rate or interest rate problem using a system of linear equations
 - ◇ Solving a word problem using a 3x3 system of linear equations: Problem type 1
 - ◇ Graphing a system of two linear inequalities: Basic
 - ◆ Functions and Graphs (12 topics)
 - ◇ Set-builder notation
 - ◇ Finding inputs and outputs of a function from its graph
 - ◇ Finding where a function is increasing, decreasing, or constant given the graph: Interval notation
 - ◇ Domain and range from the graph of a piecewise function
 - ◇ Graphing a parabola of the form $y = ax^2 + bx + c$: Rational coefficients
 - ◇ Range of a quadratic function
 - ◇ Classifying the graph of a function

- ◇ Graphing a piecewise–defined function: Problem type 1
- ◇ Determining the end behavior of the graph of a polynomial function
- ◇ Inferring properties of a polynomial function from its graph
- ◇ Horizontal line test
- ◇ Determining whether two functions are inverses of each other
- ◆ Rational Expressions (13 topics)
 - ◇ Ordering fractions with variables
 - ◇ Dividing rational expressions involving quadratics with leading coefficients of 1
 - ◇ Complex fraction made of sums involving rational expressions
 - ◇ Solving a rational equation that simplifies to quadratic: Proportional form, advanced
 - ◇ Partial fraction decomposition with distinct linear factors
 - ◇ Partial fraction decomposition with repeated linear factors
 - ◇ Partial fraction decomposition with an irreducible quadratic factor
 - ◇ Writing an equation that models variation
 - ◇ Word problem on combined variation
 - ◇ Word problem on inverse proportions
 - ◇ Word problem involving multiple rates
 - ◇ Sketching the graph of a rational function: Quadratic over linear
 - ◇ Graphing rational functions with holes
- ◆ Radical Expressions (9 topics)
 - ◇ Special products of radical expressions: Conjugates and squaring
 - ◇ Rationalizing a denominator: Quotient involving higher radicals and monomials
 - ◇ Using i to rewrite square roots of negative numbers
 - ◇ Simplifying a product and quotient involving square roots of negative numbers
 - ◇ Adding or subtracting complex numbers
 - ◇ Multiplying complex numbers
 - ◇ Dividing complex numbers
 - ◇ Simplifying a power of i
 - ◇ Solving a quadratic equation with complex roots
- ◆ Exponentials and Logarithms (7 topics)
 - ◇ Change of base for logarithms: Problem type 2
 - ◇ Solving an equation involving logarithms on both sides: Problem type 1
 - ◇ Solving an exponential equation by finding common bases: Linear and quadratic exponents
 - ◇ Finding the initial or final amount in a word problem on exponential growth or decay
 - ◇ Finding the rate or time in a word problem on continuous exponential growth or decay
 - ◇ Graphing an exponential function and its asymptote: $f(x) = a(e)^{x-b} + c$
 - ◇ Graphing a logarithmic function: Advanced
- ◆ Geometry (13 topics)
 - ◇ Areas of rectangles with the same perimeter
 - ◇ Finding a side length given the perimeter and side lengths with variables
 - ◇ Finding the radius or the diameter of a circle given its circumference
 - ◇ Circumference ratios
 - ◇ Area involving rectangles and circles
 - ◇ Word problem involving the area between two concentric circles
 - ◇ Volume of a cone: Exact answers in terms of pi
 - ◇ Volume of a sphere
 - ◇ Word problem involving the rate of filling or emptying a cylinder
 - ◇ Ratio of volumes
 - ◇ Midpoint of a line segment in the plane
 - ◇ 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
- ◆ Trigonometry (20 topics)
 - ◇ Area of a sector of a circle

- ◇ Using trigonometry to find a length in a word problem with one right triangle
- ◇ Using trigonometry to find angles of elevation or depression in a word problem
- ◇ Amplitude and period of sine and cosine functions
- ◇ Amplitude, period, and phase shift of sine and cosine functions
- ◇ Composition of a trigonometric function with its inverse 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
- ◇ Using cofunction identities
- ◇ 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
- ◇ Product-to-sum and sum-to-product identities: Problem type 1
- ◇ Solving a basic trigonometric equation involving tangent, cotangent, secant, or cosecant
- ◇ Plotting a point in polar coordinates
- ◇ Converting rectangular coordinates to polar coordinates: Special angles
- ◇ 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 coordinates

***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.*