Florida Virtual School - Calculus v8

Standards Report - Showing matching content units as of October 12, 2009, 8:29 am PDT

Grades: 9, 10, 11, 12
States: Michigan Curriculum Standards
Subjects: Mathematics

Michigan Curriculum Standards
Mathematics
Grade 9 - Adopted 2007

STRAND / STANDARD CATEGORY	**MI.L.**	Quantitative Literacy and Logic (L)
STANDARD	**L2:**	Calculation, Algorithms, and Estimation: Students calculate fluently, estimate proficiently, and describe and use algorithms in appropriate situations (e.g., approximating solutions to equations). They understand the basic ideas of iteration and algorithms.
GRADE LEVEL EXPECTATION	**L2.1**	Calculation Using Real and Complex Numbers
EXPECTATION	**L2.1.3**	Explain the exponential relationship between a number and its base 10 logarithm and use it to relate rules of logarithms to those of exponents in expressions involving numbers. Module 05: Lesson 01: The Natural Logarithmic Function and Differentiation Module 05: Lesson 02: The Natural Logarithmic Function and Integration Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A1:**	Expressions, Equations, and Inequalities: Students recognize, construct, interpret, and evaluate expressions. They fluently transform symbolic expressions into equivalent forms. They determine appropriate techniques for solving each type of equation, inequality, or system of equations, apply the techniques correctly to solve, justify the steps in the solutions, and draw conclusions from the solutions. They know and apply common formulas.
GRADE LEVEL EXPECTATION	**A1.1**	Construction, Interpretation, and Manipulation of Expressions
EXPECTATION	**A1.1.7**	Transform trigonometric expressions into equivalent forms using basic identities such as sin^2 theta + cos^2 theta = 1 and tan^2 theta + 1 = sec^2 theta (Recommended) Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A1:**	Expressions, Equations, and Inequalities: Students recognize, construct, interpret, and evaluate expressions. They fluently transform symbolic expressions into equivalent forms. They determine appropriate techniques for solving each type of equation, inequality, or system of equations, apply the techniques correctly to solve, justify the steps in the solutions, and draw conclusions from the solutions. They know and

		apply common formulas.
GRADE LEVEL EXPECTATION	**A1.2**	Solutions of Equations and Inequalities
EXPECTATION	**A1.2.3**	Solve linear and quadratic equations and inequalities including systems of up to three linear equations with three unknowns. Justify steps in the solution, and apply the quadratic formula appropriately. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A1.2.4**	Solve absolute value equations and inequalities, and justify steps in the solution. Module 00: Lesson 05: Real Numbers and the Real Line Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A1.2.5**	Solve polynomial equations and equations involving rational expressions, and justify steps in the solution. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A1.2.10**	Use special values of the inverse trigonometric functions to solve trigonometric equations over specific intervals. Module 05: Lesson 06: Inverse Trigonometric Functions and Differentiation Module 05: Lesson 07: Inverse Trigonometric Functions and Integration Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A2:**	Functions: Students understand Functions, their representations, and their attributes. They perform transformations, combine and compose Functions, and find inverses. Students classify Functions and know the characteristics of each family. They work with Functions with real coefficients fluently. Students construct or select a function to model a real-world situation in order to solve applied problems. They draw on their knowledge of families of Functions to do so.
GRADE LEVEL EXPECTATION	**A2.1**	Definitions, Representations, and Attributes of Functions
EXPECTATION	**A2.1.1**	Determine whether a relationship (given in contextual, symbolic, tabular, or graphical form) is a function and identify its domain and range. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review

		Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
EXPECTATION	**A2.1.4**	Recognize that functions may be defined by different expressions over different intervals of their domains; such functions are piecewise-defined. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.1.6**	Identify the zeros of a function, the intervals where the values of a function are positive or negative, and describe the behavior of a function as x approaches positive or negative infinity, given the symbolic and graphical representations. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 01: Lesson 02: Finding Limits Graphically and Numerically Module 01: Lesson 03: Evaluating Limits Analytically Module 01: Lesson 04: Continuity and One-Sided Limits Module 01: Lesson 04Q: Quiz Module 01: Lesson 05: Infinite Limits Module 01: Lesson 06: Module One Review Module 01: Lesson 07: Module One Oral Review Module 01: Lesson 08: Module One Test Module 03: Lesson 05: Limits at Infinity Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A2:**	Functions: Students understand Functions, their representations, and their attributes. They perform transformations, combine and compose Functions, and find inverses. Students classify Functions and know the characteristics of each family. They work with Functions with real coefficients fluently. Students construct or select a function to model a real-world situation in order to solve applied problems. They draw on their knowledge of families of Functions to do so.
GRADE LEVEL EXPECTATION	**A2.2**	Operations and Transformations
EXPECTATION	**A2.2.1**	Combine functions by addition, subtraction, multiplication, and division. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.2**	Apply given transformations to basic functions and represent symbolically. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.3**	Recognize whether a function (given in tabular or graphical form) has an inverse and recognize simple inverse pairs. Module 05: Lesson 03: Inverse Functions

		Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
EXPECTATION	**A2.2.4**	If a function has an inverse, find the expression(s) for the inverse. (Recommended) Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
EXPECTATION	**A2.2.5**	Write an expression for the composition of one function with another; recognize component functions when a function is a composition of other functions. (Recommended) Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.6**	Know and interpret the function notation for inverses and verify that two functions are inverses using composition. (Recommended) Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A3:**	Families of Functions: Students study the symbolic and graphical forms of each function family. By recognizing the unique characteristics of each family, they can use them as tools for solving problems or for modeling real-world situations.
GRADE LEVEL EXPECTATION	**A3.1**	Lines and Linear Functions
EXPECTATION	**A3.1.1**	Write the symbolic forms of linear functions (standard, point-slope, and slope-intercept) given appropriate information, and convert between forms. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.2**	Graph lines (including those of the form x = h and y = k) given appropriate information. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.3**	Relate the coefficients in a linear function to the slope and x- and y-intercepts of its graph. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.4**	Find an equation of the line parallel or perpendicular to given line, through a given point; understand and use the facts that non-vertical parallel lines have equal slopes, and that non-vertical perpendicular

		lines have slopes that multiply to give -1. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A3:**	Families of Functions: Students study the symbolic and graphical forms of each function family. By recognizing the unique characteristics of each family, they can use them as tools for solving problems or for modeling real-world situations.
GRADE LEVEL EXPECTATION	**A3.3**	Quadratic Functions
EXPECTATION	**A3.3.1**	Write the symbolic form and sketch the graph of a quadratic function given appropriate information. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.3.2**	Identify the elements of a parabola (vertex, axis of symmetry, direction of opening) given its symbolic form or its graph, and relate these elements to the coefficient(s) of the symbolic form of the function. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.3.4**	Relate the number of real solutions of a quadratic equation to the graph of the associated quadratic function. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A3:**	Families of Functions: Students study the symbolic and graphical forms of each function family. By recognizing the unique characteristics of each family, they can use them as tools for solving problems or for modeling real-world situations.
GRADE LEVEL EXPECTATION	**A3.4**	Power Functions
EXPECTATION	**A3.4.3**	Analyze the graphs of power functions, noting reflectional or rotational symmetry. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)

STANDARD	**A3:**	Families of Functions: Students study the symbolic and graphical forms of each function family. By recognizing the unique characteristics of each family, they can use them as tools for solving problems or for modeling real-world situations.
GRADE LEVEL EXPECTATION	**A3.5**	Polynomial Functions
EXPECTATION	**A3.5.1**	Write the symbolic form and sketch the graph of simple polynomial functions. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.5.2**	Understand the effects of degree, leading coefficient, and number of real zeros on the graphs of polynomial functions of degree greater than 2. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.5.3**	Determine the maximum possible number of zeros of a polynomial function, and understand the relationship between the x-intercepts of the graph and the factored form of the function. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A3:**	Families of Functions: Students study the symbolic and graphical forms of each function family. By recognizing the unique characteristics of each family, they can use them as tools for solving problems or for modeling real-world situations.
GRADE LEVEL EXPECTATION	**A3.7**	Trigonometric Functions
EXPECTATION	**A3.7.1**	Use the unit circle to define sine and cosine; approximate values of sine and cosine; use sine and cosine to define the remaining trigonometric functions; explain why the trigonometric functions are periodic. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.2**	Use the relationship between degree and radian measures to solve problems. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.3**	Use the unit circle to determine the exact values of sine and cosine, for integer multiples of pi/6 and pi/4. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.4**	Graph the sine and cosine functions; analyze graphs by noting domain, range, period, amplitude, and location of maxima and minima.

		Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.5**	Graph transformations of basic trigonometric functions (involving changes in period, amplitude, and midline) and understand the relationship between constants in the formula and the transformed graph. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.G.**	Geometry and Trigonometry (G)
STANDARD	**G1:**	Figures and Their Properties: Students represent basic geometric figures, polygons, and conic sections and apply their definitions and properties in solving problems and justifying arguments, including constructions and representations in the coordinate plane. Students represent three-dimensional figures, understand the concepts of volume and surface area, and use them to solve problems. They know and apply properties of common three-dimensional figures.
GRADE LEVEL EXPECTATION	**G1.3**	Triangles and Trigonometry
EXPECTATION	**G1.3.3**	Determine the exact values of sine, cosine, and tangent for 0 degrees, 30 degrees, 45 degrees, 60 degrees, and their integer multiples and apply in various contexts. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.G.**	Geometry and Trigonometry (G)
STANDARD	**G1:**	Figures and Their Properties: Students represent basic geometric figures, polygons, and conic sections and apply their definitions and properties in solving problems and justifying arguments, including constructions and representations in the coordinate plane. Students represent three-dimensional figures, understand the concepts of volume and surface area, and use them to solve problems. They know and apply properties of common three-dimensional figures.
GRADE LEVEL EXPECTATION	**G1.7**	Conic Sections and Their Properties
EXPECTATION	**G.1.7.1**	Find an equation of a circle given its center and radius; given the equation of a circle, find its center and radius. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**G1.7.3**	Graph ellipses and hyperbolas with axes parallel to the x- and y-axes, given equations. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**G1.7.4**	Know and use the relationship between the vertices and foci in and ellipse, the vertices and foci in a hyperbola, and the directrix and focus

		in a parabola, interpret these relationships in applied contexts. (Recommended) Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P1:**	Functions
GRADE LEVEL EXPECTATION	**P1.1**	Know and use a definition of a function to decide if a given relation is a function. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P1.2**	Perform algebraic operations (including compositions) on functions and apply transformations (translations, reflections, and rescalings). Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P1.3**	Write an expression for the composition of one given function with another and find the domain, range, and graph of the composite function. Recognize components when a function is composed of two or more elementary functions. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P1.4**	Determine whether a function (given symbolically or graphically) has an inverse and express the inverse (symbolically, if the function is given symbolically, or graphically, if given graphically) if it exists. Know and interpret the function notation for inverses. Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
GRADE LEVEL EXPECTATION	**P1.5**	Determine whether two given functions are inverses, using composition. Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
GRADE LEVEL EXPECTATION	**P1.6**	Identify and describe discontinuities of a function (e.g., greatest integer function, 1/x) and how these relate to the graph. Module 01: Lesson 04: Continuity and One-Sided Limits Module 01: Lesson 04Q: Quiz Module 01: Lesson 06: Module One Review Module 01: Lesson 07: Module One Oral Review Module 01: Lesson 08: Module One Test Module 02: Lesson 01: The Derivative and The Tangent Line Problem Module 02: Lesson 02: Basic Differentiation Rules and Rates of Change Module 02: Lesson 03: The Product and Quotient Rules Module 02: Lesson 03Q: Quiz Module 02: Lesson 04: The Chain Rule Module 02: Lesson 05: Implicit Differentiation Module 02: Lesson 06: Related Rates Module 02: Lesson 07: Module Two Review Module 02: Lesson 08: Module Two Oral Review Module 02: Lesson 09: Module Two Test Module 03: Lesson 02: Rolle's Theorem and the Mean Value of Theorem Module 03: Lesson 03: Increasing and Decreasing Functions

		Module 03: Lesson 04: Concavity and the Second Derivative Test Module 03: Lesson 04Q: Quiz Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam Module 05: Lesson 03: Inverse Functions Module 05: Lesson 04: Exponential Functions Module 05: Lesson 05: Bases Other Than e and Applications Module 05: Lesson 05Q: Quiz Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
GRADE LEVEL EXPECTATION	**P1.7**	Understand the concept of limit of a function as x approaches a number or infinity. Use the idea of limit to analyze a graph as it approaches an asymptote. Compute limits of simple functions (e.g., find the limit as x approaches 0 of f(x) = 1/x) informally. Module 01: Lesson 02: Finding Limits Graphically and Numerically Module 01: Lesson 03: Evaluating Limits Analytically Module 01: Lesson 04: Continuity and One-Sided Limits Module 01: Lesson 04Q: Quiz Module 01: Lesson 05: Infinite Limits Module 01: Lesson 06: Module One Review Module 01: Lesson 07: Module One Oral Review Module 01: Lesson 08: Module One Test Module 03: Lesson 05: Limits at Infinity Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P3:**	Quadratic Functions
GRADE LEVEL EXPECTATION	**P3.1**	Solve quadratic-type equations (e.g. e^(2x) - 4 e^(x+4)=0) by substitution. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P4:**	Polynomial Functions
GRADE LEVEL EXPECTATION	**P4.2**	Solve polynomial equations and inequalities of degree greater than or equal to three. Graph polynomial functions given in factored form using zeros and their multiplicities, testing the sign-on intervals and analyzing the function's large-scale behavior. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P5:**	Rational Functions and Difference Quotients
GRADE LEVEL EXPECTATION	**P5.3**	Know and apply the definition and geometric interpretation of difference quotient. Simplify difference quotients and interpret difference quotients as rates of change and slopes of secant lines. Module 01: Lesson 01: A Preview of Calculus Module 02: Lesson 01: The Derivative and The Tangent Line Problem Module 02: Lesson 02: Basic Differentiation Rules and Rates of Change Module 02: Lesson 03: The Product and Quotient Rules

		Module 02: Lesson 03Q: Quiz Module 02: Lesson 04: The Chain Rule Module 02: Lesson 05: Implicit Differentiation Module 02: Lesson 06: Related Rates Module 02: Lesson 07: Module Two Review Module 02: Lesson 08: Module Two Oral Review Module 02: Lesson 09: Module Two Test Module 03: Lesson 08: Differentials Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P6:**	Trigonometric Functions
GRADE LEVEL EXPECTATION	**P6.1**	Define (using the unit circle), graph, and use all trigonometric functions of any angle. Convert between radian and degree measure. Calculate arc lengths in given circles. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P6.2**	Graph transformations of the sine and cosine functions (involving changes in amplitude, period, midline, and phase) and explain the relationship between constants in the formula and transformed graph. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P6.3**	Know basic properties of the inverse trigonometric functions sin^-1 x, cos^-1 x, tan^-1 x, including their domains and ranges. Recognize their graphs. Module 05: Lesson 06: Inverse Trigonometric Functions and Differentiation Module 05: Lesson 07: Inverse Trigonometric Functions and Integration Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
GRADE LEVEL EXPECTATION	**P6.4**	Know the basic trigonometric identities for sine, cosine, and tangent (e.g., the Pythagorean identities, sum and difference formulas, co-functions relationships, double-angle and half-angle formulas). Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P6.5**	Solve trigonometric equations using basic identities and inverse trigonometric functions. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P6.6**	Prove trigonometric identities and derive some of the basic ones (e.g., double-angle formula from sum and difference formulas, half-angle formula from double-angle formula, etc.). Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P8:**	Sequences, Series, and Mathematical Induction
GRADE LEVEL	**P8.1**	Know, explain, and use sigma and factorial notation.

EXPECTATION		Module 04: Lesson 02: Area Module 04: Lesson 02Q: Quiz 1 Module 04: Lesson 02X: Segment One Exam Module 04: Lesson 03: RieMAnn Sums and Definite Integrals Module 04: Lesson 04Q: Quiz 2 Module 04: Lesson 07: Module Four Review Module 04: Lesson 08: Module Four Oral Review Module 04: Lesson 09: Module Four Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P9:**	Polar Coordinates, Parameterizations, and Conic Sections
GRADE LEVEL EXPECTATION	**P9.8**	Identify parabolas, ellipses, and hyperbolas from equations, write the equations in standard form, and sketch an appropriate graph of the conic section. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P9.9**	Derive the equation for a conic section from given geometric information (e.g., find the equation of an ellipse given its two axes). Identify key characteristics (e.g. foci and asymptotes) of a conic section from its equation or graph. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**L1:**	Reasoning About Numbers, Systems, and Quantitative Situations
GRADE LEVEL EXPECTATION	**L1.2.**	Representations and Relationships
EXPECTATION	**L1.2.2.**	Interpret representations that reflect absolute value relationships. Module 00: Lesson 05: Real Numbers and the Real Line Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A1:**	Expressions, Equations, and Inequalities
GRADE LEVEL EXPECTATION	**A1.2.**	Solutions of Equations and Inequalities
EXPECTATION	**A1.2.3.**	Solve linear and quadratic equations and inequalities including systems of up to three linear equations with three unknowns. Justify steps in the solution, and apply the quadratic formula appropriately. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A1.2.4.**	Solve absolute value equations and inequalities and justify steps in the solution. Module 00: Lesson 05: Real Numbers and the Real Line Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD	**MI.AI.**	Algebra I

CATEGORY		
STANDARD	**A2:**	Functions
GRADE LEVEL EXPECTATION	**A2.1.**	Definitions, Representations, and Attributes of Functions
EXPECTATION	**A2.1.1.**	Determine whether a relationship (given in contextual, symbolic, tabular, or graphical form) is a function and identify its domain and range. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
EXPECTATION	**A2.1.4.**	Recognize that functions may be defined by different expressions over different intervals of their domains; such functions are piecewise-defined. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.1.6.**	Identify the zeros of a function, the intervals where the values of a function are positive or negative, and describe the behavior of a function as x approaches positive or negative infinity, given the symbolic and graphical representations. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 01: Lesson 02: Finding Limits Graphically and Numerically Module 01: Lesson 03: Evaluating Limits Analytically Module 01: Lesson 04: Continuity and One-Sided Limits Module 01: Lesson 04Q: Quiz Module 01: Lesson 05: Infinite Limits Module 01: Lesson 06: Module One Review Module 01: Lesson 07: Module One Oral Review Module 01: Lesson 08: Module One Test Module 03: Lesson 05: Limits at Infinity Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A2:**	Functions
GRADE LEVEL EXPECTATION	**A2.2.**	Operations and Transformations with Functions
EXPECTATION	**A2.2.1.**	Combine functions by addition, subtraction, multiplication, and division. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review

		Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.2.**	Apply given transformations to parent functions and represent symbolically. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.3.**	Determine whether a function (given in tabular or graphical form) has an inverse and recognize simple inverse pairs. Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A3:**	Families of Functions
GRADE LEVEL EXPECTATION	**A3.1.**	Lines and Linear Functions
EXPECTATION	**A3.1.1.**	Write the symbolic forms of linear functions (standard, point-slope, and slope-intercept) given appropriate information and convert between forms. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.2.**	Graph lines (including those of the form x = h and y = k) given appropriate information. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.3.**	Relate the coefficients in a linear function to the slope and x- and y-intercepts of its graph. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.4.**	Find an equation of the line parallel or perpendicular to given line, through a given point; understand and use the facts that non-vertical parallel lines have equal slopes, and that non-vertical perpendicular lines have slopes that multiply to give -1. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A3:**	Families of Functions
GRADE LEVEL EXPECTATION	**A3.3.**	Quadratic Functions
EXPECTATION	**A3.3.1.**	Write the symbolic form and sketch the graph of a quadratic function

		given appropriate information. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.3.2.**	Identify the elements of a parabola (vertex, axis of symmetry, direction of opening) given its symbolic form or its graph, and relate these elements to the coefficient(s) of the symbolic form of the function. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.3.4.**	Relate the number of real solutions of a quadratic equation to the graph of the associated quadratic function. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A3:**	Families of Functions
GRADE LEVEL EXPECTATION	**A3.4.**	Power Functions
EXPECTATION	**A3.4.3.**	Analyze the graphs of power functions, noting reflectional or rotational symmetry. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A3:**	Families of Functions
GRADE LEVEL EXPECTATION	**A3.5.**	Polynomial Functions
EXPECTATION	**A3.5.1.**	Write the symbolic form and sketch the graph of simple polynomial functions. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.5.2.**	Understand the effects of degree, leading coefficient, and number of real zeros on the graphs of polynomial functions of degree greater than 2. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.5.3.**	Determine the maximum possible number of zeroes of a polynomial

		function and understand the relationship between the x-intercepts of the graph and the factored form of the function. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**L2:**	Calculation, Algorithms, and Estimation
GRADE LEVEL EXPECTATION	**L2.1.**	Calculation Using Real and Complex Numbers
EXPECTATION	**L2.1.3.**	Explain the exponential relationship between a number and its base 10 logarithm, and use it to relate rules of logarithms to those of exponents in expressions involving numbers. Module 05: Lesson 01: The Natural Logarithmic Function and Differentiation Module 05: Lesson 02: The Natural Logarithmic Function and Integration Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**A1:**	Expressions, Equations and Inequalities
GRADE LEVEL EXPECTATION	**A1.2.**	Solutions of Equations and Inequalities
EXPECTATION	**A1.2.5.**	Solve polynomial equations and equations involving rational expressions and justify steps in the solution. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A1.2.10.**	Use special values of the inverse trigonometric functions to solve trigonometric equations over specific intervals. Module 05: Lesson 06: Inverse Trigonometric Functions and Differentiation Module 05: Lesson 07: Inverse Trigonometric Functions and Integration Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**A2:**	Functions
GRADE LEVEL EXPECTATION	**A2.1.**	Definitions, Representations, and Attributes of Functions
EXPECTATION	**A2.1.1.**	Determine whether a relationship (given in contextual, symbolic, tabular, or graphical form) is a function, and identify its domain and range. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 03: Lesson 06: A SumMAry of Curve Sketching

		Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
EXPECTATION	**A2.1.6.**	Identify the zeros of a function, the intervals where the values of a function are positive or negative, and describe the behavior of a function as x approaches positive or negative infinity, given the symbolic and graphical representations. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 01: Lesson 02: Finding Limits Graphically and Numerically Module 01: Lesson 03: Evaluating Limits Analytically Module 01: Lesson 04: Continuity and One-Sided Limits Module 01: Lesson 04Q: Quiz Module 01: Lesson 05: Infinite Limits Module 01: Lesson 06: Module One Review Module 01: Lesson 07: Module One Oral Review Module 01: Lesson 08: Module One Test Module 03: Lesson 05: Limits at Infinity Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**A2:**	Functions
GRADE LEVEL EXPECTATION	**A2.2.**	Operations and Transformations with Functions
EXPECTATION	**A2.2.1.**	Combine functions by addition, subtraction, multiplication, and division. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.2.**	Apply given transformations to parent functions, and represent symbolically. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.3.**	Recognize whether a function (given in tabular or graphical form) has an inverse, and recognize simple inverse pairs. Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II

STANDARD	**A3:**	Families of Functions
GRADE LEVEL EXPECTATION	**A3.7.**	Trigonometric Functions
EXPECTATION	**A3.7.1.**	Use the unit circle to define sine and cosine; approximate values of sine and cosine; use sine and cosine to define the remaining trigonometric functions; explain why the trigonometric functions are periodic. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.2.**	Use the relationship between degree and radian measures to solve problems. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.3.**	Use the unit circle to determine the exact values of sine and cosine, for integer multiples of pi/6 and pi/4. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.4.**	Graph the sine and cosine functions; analyze graphs by noting domain, range, period, amplitude, and location of maxima and minima. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.5.**	Graph transformations of basic trigonometric functions (involving changes in period, amplitude, phase, and midline) and understand the relationship between constants in the formula and the transformed graph. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**G1:**	Figures and Their Properties
GRADE LEVEL EXPECTATION	**G1.7.**	Conic Sections and Their Properties
EXPECTATION	**G1.7.1.**	Find an equation of a circle given its center and radius; given the equation of a circle, find its center and radius. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**G1.7.3.**	Graph ellipses and hyperbolas with axes parallel to the x- and y-axes, given equations. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam

STRAND / STANDARD CATEGORY	**MI.G.**	Geometry
STANDARD	**G1:**	Figures and Their Properties
GRADE LEVEL EXPECTATION	**G1.3.**	Triangles and Trigonometry
EXPECTATION	**G1.3.3.**	Determine the exact values of sine, cosine, and tangent for 0 degrees, 30 degrees, 45 degrees, 60 degrees, and their integer multiples and apply in various contexts. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam

Michigan Curriculum Standards
Mathematics
Grade 10 - Adopted 2007

STRAND / STANDARD CATEGORY	**MI.L.**	Quantitative Literacy and Logic (L)
STANDARD	**L2:**	Calculation, Algorithms, and Estimation: Students calculate fluently, estimate proficiently, and describe and use algorithms in appropriate situations (e.g., approximating solutions to equations). They understand the basic ideas of iteration and algorithms.
GRADE LEVEL EXPECTATION	**L2.1**	Calculation Using Real and Complex Numbers
EXPECTATION	**L2.1.3**	Explain the exponential relationship between a number and its base 10 logarithm and use it to relate rules of logarithms to those of exponents in expressions involving numbers. Module 05: Lesson 01: The Natural Logarithmic Function and Differentiation Module 05: Lesson 02: The Natural Logarithmic Function and Integration Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A1:**	Expressions, Equations, and Inequalities: Students recognize, construct, interpret, and evaluate expressions. They fluently transform symbolic expressions into equivalent forms. They determine appropriate techniques for solving each type of equation, inequality, or system of equations, apply the techniques correctly to solve, justify the steps in the solutions, and draw conclusions from the solutions. They know and apply common formulas.
GRADE LEVEL EXPECTATION	**A1.1**	Construction, Interpretation, and Manipulation of Expressions
EXPECTATION	**A1.1.7**	Transform trigonometric expressions into equivalent forms using basic identities such as sin^2 theta + cos^2 theta = 1 and tan^2 theta + 1 = sec^2 theta (Recommended) Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)

STANDARD	**A1:**	Expressions, Equations, and Inequalities: Students recognize, construct, interpret, and evaluate expressions. They fluently transform symbolic expressions into equivalent forms. They determine appropriate techniques for solving each type of equation, inequality, or system of equations, apply the techniques correctly to solve, justify the steps in the solutions, and draw conclusions from the solutions. They know and apply common formulas.
GRADE LEVEL EXPECTATION	**A1.2**	Solutions of Equations and Inequalities
EXPECTATION	**A1.2.3**	Solve linear and quadratic equations and inequalities including systems of up to three linear equations with three unknowns. Justify steps in the solution, and apply the quadratic formula appropriately. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A1.2.4**	Solve absolute value equations and inequalities, and justify steps in the solution. Module 00: Lesson 05: Real Numbers and the Real Line Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A1.2.5**	Solve polynomial equations and equations involving rational expressions, and justify steps in the solution. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A1.2.10**	Use special values of the inverse trigonometric functions to solve trigonometric equations over specific intervals. Module 05: Lesson 06: Inverse Trigonometric Functions and Differentiation Module 05: Lesson 07: Inverse Trigonometric Functions and Integration Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A2:**	Functions: Students understand Functions, their representations, and their attributes. They perform transformations, combine and compose Functions, and find inverses. Students classify Functions and know the characteristics of each family. They work with Functions with real coefficients fluently. Students construct or select a function to model a real-world situation in order to solve applied problems. They draw on their knowledge of families of Functions to do so.
GRADE LEVEL EXPECTATION	**A2.1**	Definitions, Representations, and Attributes of Functions
EXPECTATION	**A2.1.1**	Determine whether a relationship (given in contextual, symbolic, tabular, or graphical form) is a function and identify its domain and range. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems

		Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
EXPECTATION	**A2.1.4**	Recognize that functions may be defined by different expressions over different intervals of their domains; such functions are piecewise-defined. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.1.6**	Identify the zeros of a function, the intervals where the values of a function are positive or negative, and describe the behavior of a function as x approaches positive or negative infinity, given the symbolic and graphical representations. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 01: Lesson 02: Finding Limits Graphically and Numerically Module 01: Lesson 03: Evaluating Limits Analytically Module 01: Lesson 04: Continuity and One-Sided Limits Module 01: Lesson 04Q: Quiz Module 01: Lesson 05: Infinite Limits Module 01: Lesson 06: Module One Review Module 01: Lesson 07: Module One Oral Review Module 01: Lesson 08: Module One Test Module 03: Lesson 05: Limits at Infinity Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A2:**	Functions: Students understand Functions, their representations, and their attributes. They perform transformations, combine and compose Functions, and find inverses. Students classify Functions and know the characteristics of each family. They work with Functions with real coefficients fluently. Students construct or select a function to model a real-world situation in order to solve applied problems. They draw on their knowledge of families of Functions to do so.
GRADE LEVEL EXPECTATION	**A2.2**	Operations and Transformations
EXPECTATION	**A2.2.1**	Combine functions by addition, subtraction, multiplication, and division. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.2**	Apply given transformations to basic functions and represent symbolically. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test

		Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.3**	Recognize whether a function (given in tabular or graphical form) has an inverse and recognize simple inverse pairs. Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
EXPECTATION	**A2.2.4**	If a function has an inverse, find the expression(s) for the inverse. (Recommended) Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
EXPECTATION	**A2.2.5**	Write an expression for the composition of one function with another; recognize component functions when a function is a composition of other functions. (Recommended) Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.6**	Know and interpret the function notation for inverses and verify that two functions are inverses using composition. (Recommended) Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A3:**	Families of Functions: Students study the symbolic and graphical forms of each function family. By recognizing the unique characteristics of each family, they can use them as tools for solving problems or for modeling real-world situations.
GRADE LEVEL EXPECTATION	**A3.1**	Lines and Linear Functions
EXPECTATION	**A3.1.1**	Write the symbolic forms of linear functions (standard, point-slope, and slope-intercept) given appropriate information, and convert between forms. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.2**	Graph lines (including those of the form x = h and y = k) given appropriate information. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.3**	Relate the coefficients in a linear function to the slope and x- and y-intercepts of its graph. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review

		Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.4**	Find an equation of the line parallel or perpendicular to given line, through a given point; understand and use the facts that non-vertical parallel lines have equal slopes, and that non-vertical perpendicular lines have slopes that multiply to give -1. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A3:**	Families of Functions: Students study the symbolic and graphical forms of each function family. By recognizing the unique characteristics of each family, they can use them as tools for solving problems or for modeling real-world situations.
GRADE LEVEL EXPECTATION	**A3.3**	Quadratic Functions
EXPECTATION	**A3.3.1**	Write the symbolic form and sketch the graph of a quadratic function given appropriate information. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.3.2**	Identify the elements of a parabola (vertex, axis of symmetry, direction of opening) given its symbolic form or its graph, and relate these elements to the coefficient(s) of the symbolic form of the function. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.3.4**	Relate the number of real solutions of a quadratic equation to the graph of the associated quadratic function. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A3:**	Families of Functions: Students study the symbolic and graphical forms of each function family. By recognizing the unique characteristics of each family, they can use them as tools for solving problems or for modeling real-world situations.
GRADE LEVEL EXPECTATION	**A3.4**	Power Functions
EXPECTATION	**A3.4.3**	Analyze the graphs of power functions, noting reflectional or rotational symmetry. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test

		Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A3:**	Families of Functions: Students study the symbolic and graphical forms of each function family. By recognizing the unique characteristics of each family, they can use them as tools for solving problems or for modeling real-world situations.
GRADE LEVEL EXPECTATION	**A3.5**	Polynomial Functions
EXPECTATION	**A3.5.1**	Write the symbolic form and sketch the graph of simple polynomial functions. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.5.2**	Understand the effects of degree, leading coefficient, and number of real zeros on the graphs of polynomial functions of degree greater than 2. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.5.3**	Determine the maximum possible number of zeros of a polynomial function, and understand the relationship between the x-intercepts of the graph and the factored form of the function. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A3:**	Families of Functions: Students study the symbolic and graphical forms of each function family. By recognizing the unique characteristics of each family, they can use them as tools for solving problems or for modeling real-world situations.
GRADE LEVEL EXPECTATION	**A3.7**	Trigonometric Functions
EXPECTATION	**A3.7.1**	Use the unit circle to define sine and cosine; approximate values of sine and cosine; use sine and cosine to define the remaining trigonometric functions; explain why the trigonometric functions are periodic. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.2**	Use the relationship between degree and radian measures to solve problems. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.3**	Use the unit circle to determine the exact values of sine and cosine, for integer multiples of pi/6 and pi/4. Module 00: Lesson 07: Trigonometry Review

		Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.4**	Graph the sine and cosine functions; analyze graphs by noting domain, range, period, amplitude, and location of maxima and minima. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.5**	Graph transformations of basic trigonometric functions (involving changes in period, amplitude, and midline) and understand the relationship between constants in the formula and the transformed graph. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.G.**	Geometry and Trigonometry (G)
STANDARD	**G1:**	Figures and Their Properties: Students represent basic geometric figures, polygons, and conic sections and apply their definitions and properties in solving problems and justifying arguments, including constructions and representations in the coordinate plane. Students represent three-dimensional figures, understand the concepts of volume and surface area, and use them to solve problems. They know and apply properties of common three-dimensional figures.
GRADE LEVEL EXPECTATION	**G1.3**	Triangles and Trigonometry
EXPECTATION	**G1.3.3**	Determine the exact values of sine, cosine, and tangent for 0 degrees, 30 degrees, 45 degrees, 60 degrees, and their integer multiples and apply in various contexts. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.G.**	Geometry and Trigonometry (G)
STANDARD	**G1:**	Figures and Their Properties: Students represent basic geometric figures, polygons, and conic sections and apply their definitions and properties in solving problems and justifying arguments, including constructions and representations in the coordinate plane. Students represent three-dimensional figures, understand the concepts of volume and surface area, and use them to solve problems. They know and apply properties of common three-dimensional figures.
GRADE LEVEL EXPECTATION	**G1.7**	Conic Sections and Their Properties
EXPECTATION	**G.1.7.1**	Find an equation of a circle given its center and radius; given the equation of a circle, find its center and radius. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**G1.7.3**	Graph ellipses and hyperbolas with axes parallel to the x- and y-axes, given equations. Module 00: Lesson 06: The Cartesian Plane

		Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**G1.7.4**	Know and use the relationship between the vertices and foci in and ellipse, the vertices and foci in a hyperbola, and the directrix and focus in a parabola, interpret these relationships in applied contexts. (Recommended) Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P1:**	Functions
GRADE LEVEL EXPECTATION	**P1.1**	Know and use a definition of a function to decide if a given relation is a function. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P1.2**	Perform algebraic operations (including compositions) on functions and apply transformations (translations, reflections, and rescalings). Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P1.3**	Write an expression for the composition of one given function with another and find the domain, range, and graph of the composite function. Recognize components when a function is composed of two or more elementary functions. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P1.4**	Determine whether a function (given symbolically or graphically) has an inverse and express the inverse (symbolically, if the function is given symbolically, or graphically, if given graphically) if it exists. Know and interpret the function notation for inverses. Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
GRADE LEVEL EXPECTATION	**P1.5**	Determine whether two given functions are inverses, using composition. Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
GRADE LEVEL EXPECTATION	**P1.6**	Identify and describe discontinuities of a function (e.g., greatest integer function, 1/x) and how these relate to the graph. Module 01: Lesson 04: Continuity and One-Sided Limits Module 01: Lesson 04Q: Quiz Module 01: Lesson 06: Module One Review Module 01: Lesson 07: Module One Oral Review Module 01: Lesson 08: Module One Test Module 02: Lesson 01: The Derivative and The Tangent Line Problem Module 02: Lesson 02: Basic Differentiation Rules and Rates of Change Module 02: Lesson 03: The Product and Quotient Rules Module 02: Lesson 03Q: Quiz Module 02: Lesson 04: The Chain Rule Module 02: Lesson 05: Implicit Differentiation

		Module 02: Lesson 06: Related Rates Module 02: Lesson 07: Module Two Review Module 02: Lesson 08: Module Two Oral Review Module 02: Lesson 09: Module Two Test Module 03: Lesson 02: Rolle's Theorem and the Mean Value of Theorem Module 03: Lesson 03: Increasing and Decreasing Functions Module 03: Lesson 04: Concavity and the Second Derivative Test Module 03: Lesson 04Q: Quiz Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam Module 05: Lesson 03: Inverse Functions Module 05: Lesson 04: Exponential Functions Module 05: Lesson 05: Bases Other Than e and Applications Module 05: Lesson 05Q: Quiz Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
GRADE LEVEL EXPECTATION	**P1.7**	Understand the concept of limit of a function as x approaches a number or infinity. Use the idea of limit to analyze a graph as it approaches an asymptote. Compute limits of simple functions (e.g., find the limit as x approaches 0 of f(x) = 1/x) informally. Module 01: Lesson 02: Finding Limits Graphically and Numerically Module 01: Lesson 03: Evaluating Limits Analytically Module 01: Lesson 04: Continuity and One-Sided Limits Module 01: Lesson 04Q: Quiz Module 01: Lesson 05: Infinite Limits Module 01: Lesson 06: Module One Review Module 01: Lesson 07: Module One Oral Review Module 01: Lesson 08: Module One Test Module 03: Lesson 05: Limits at Infinity Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P3:**	Quadratic Functions
GRADE LEVEL EXPECTATION	**P3.1**	Solve quadratic-type equations (e.g. e^(2x) - 4 e^(x+4)=0) by substitution. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P4:**	Polynomial Functions
GRADE LEVEL EXPECTATION	**P4.2**	Solve polynomial equations and inequalities of degree greater than or equal to three. Graph polynomial functions given in factored form using zeros and their multiplicities, testing the sign-on intervals and analyzing the function's large-scale behavior. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P5:**	Rational Functions and Difference Quotients
GRADE LEVEL	**P5.3**	Know and apply the definition and geometric interpretation of difference quotient. Simplify difference quotients and interpret difference quotients as

EXPECTATION		rates of change and slopes of secant lines. Module 01: Lesson 01: A Preview of Calculus Module 02: Lesson 01: The Derivative and The Tangent Line Problem Module 02: Lesson 02: Basic Differentiation Rules and Rates of Change Module 02: Lesson 03: The Product and Quotient Rules Module 02: Lesson 03Q: Quiz Module 02: Lesson 04: The Chain Rule Module 02: Lesson 05: Implicit Differentiation Module 02: Lesson 06: Related Rates Module 02: Lesson 07: Module Two Review Module 02: Lesson 08: Module Two Oral Review Module 02: Lesson 09: Module Two Test Module 03: Lesson 08: Differentials Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P6:**	Trigonometric Functions
GRADE LEVEL EXPECTATION	**P6.1**	Define (using the unit circle), graph, and use all trigonometric functions of any angle. Convert between radian and degree measure. Calculate arc lengths in given circles. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P6.2**	Graph transformations of the sine and cosine functions (involving changes in amplitude, period, midline, and phase) and explain the relationship between constants in the formula and transformed graph. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P6.3**	Know basic properties of the inverse trigonometric functions sin^-1 x, cos^-1 x, tan^-1 x, including their domains and ranges. Recognize their graphs. Module 05: Lesson 06: Inverse Trigonometric Functions and Differentiation Module 05: Lesson 07: Inverse Trigonometric Functions and Integration Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
GRADE LEVEL EXPECTATION	**P6.4**	Know the basic trigonometric identities for sine, cosine, and tangent (e.g., the Pythagorean identities, sum and difference formulas, co-functions relationships, double-angle and half-angle formulas). Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P6.5**	Solve trigonometric equations using basic identities and inverse trigonometric functions. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P6.6**	Prove trigonometric identities and derive some of the basic ones (e.g., double-angle formula from sum and difference formulas, half-angle formula from double-angle formula, etc.). Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam

STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P8:**	Sequences, Series, and Mathematical Induction
GRADE LEVEL EXPECTATION	**P8.1**	Know, explain, and use sigma and factorial notation. Module 04: Lesson 02: Area Module 04: Lesson 02Q: Quiz 1 Module 04: Lesson 02X: Segment One Exam Module 04: Lesson 03: RieMAnn Sums and Definite Integrals Module 04: Lesson 04Q: Quiz 2 Module 04: Lesson 07: Module Four Review Module 04: Lesson 08: Module Four Oral Review Module 04: Lesson 09: Module Four Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P9:**	Polar Coordinates, Parameterizations, and Conic Sections
GRADE LEVEL EXPECTATION	**P9.8**	Identify parabolas, ellipses, and hyperbolas from equations, write the equations in standard form, and sketch an appropriate graph of the conic section. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P9.9**	Derive the equation for a conic section from given geometric information (e.g., find the equation of an ellipse given its two axes). Identify key characteristics (e.g. foci and asymptotes) of a conic section from its equation or graph. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**L1:**	Reasoning About Numbers, Systems, and Quantitative Situations
GRADE LEVEL EXPECTATION	**L1.2.**	Representations and Relationships
EXPECTATION	**L1.2.2.**	Interpret representations that reflect absolute value relationships. Module 00: Lesson 05: Real Numbers and the Real Line Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A1:**	Expressions, Equations, and Inequalities
GRADE LEVEL EXPECTATION	**A1.2.**	Solutions of Equations and Inequalities
EXPECTATION	**A1.2.3.**	Solve linear and quadratic equations and inequalities including systems of up to three linear equations with three unknowns. Justify steps in the solution, and apply the quadratic formula appropriately. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A1.2.4.**	Solve absolute value equations and inequalities and justify steps in the solution.

		Module 00: Lesson 05: Real Numbers and the Real Line Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A2:**	Functions
GRADE LEVEL EXPECTATION	**A2.1.**	Definitions, Representations, and Attributes of Functions
EXPECTATION	**A2.1.1.**	Determine whether a relationship (given in contextual, symbolic, tabular, or graphical form) is a function and identify its domain and range. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
EXPECTATION	**A2.1.4.**	Recognize that functions may be defined by different expressions over different intervals of their domains; such functions are piecewise-defined. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.1.6.**	Identify the zeros of a function, the intervals where the values of a function are positive or negative, and describe the behavior of a function as x approaches positive or negative infinity, given the symbolic and graphical representations. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 01: Lesson 02: Finding Limits Graphically and Numerically Module 01: Lesson 03: Evaluating Limits Analytically Module 01: Lesson 04: Continuity and One-Sided Limits Module 01: Lesson 04Q: Quiz Module 01: Lesson 05: Infinite Limits Module 01: Lesson 06: Module One Review Module 01: Lesson 07: Module One Oral Review Module 01: Lesson 08: Module One Test Module 03: Lesson 05: Limits at Infinity Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A2:**	Functions
GRADE LEVEL	**A2.2.**	Operations and Transformations with Functions

EXPECTATION		
EXPECTATION	**A2.2.1.**	Combine functions by addition, subtraction, multiplication, and division. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.2.**	Apply given transformations to parent functions and represent symbolically. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.3.**	Determine whether a function (given in tabular or graphical form) has an inverse and recognize simple inverse pairs. Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A3:**	Families of Functions
GRADE LEVEL EXPECTATION	**A3.1.**	Lines and Linear Functions
EXPECTATION	**A3.1.1.**	Write the symbolic forms of linear functions (standard, point-slope, and slope-intercept) given appropriate information and convert between forms. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.2.**	Graph lines (including those of the form x = h and y = k) given appropriate information. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.3.**	Relate the coefficients in a linear function to the slope and x- and y-intercepts of its graph. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.4.**	Find an equation of the line parallel or perpendicular to given line, through a given point; understand and use the facts that non-vertical parallel lines have equal slopes, and that non-vertical perpendicular lines have slopes that multiply to give -1. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD	**MI.AI.**	Algebra I

CATEGORY		
STANDARD	**A3:**	Families of Functions
GRADE LEVEL EXPECTATION	**A3.3.**	Quadratic Functions
EXPECTATION	**A3.3.1.**	Write the symbolic form and sketch the graph of a quadratic function given appropriate information. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.3.2.**	Identify the elements of a parabola (vertex, axis of symmetry, direction of opening) given its symbolic form or its graph, and relate these elements to the coefficient(s) of the symbolic form of the function. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.3.4.**	Relate the number of real solutions of a quadratic equation to the graph of the associated quadratic function. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A3:**	Families of Functions
GRADE LEVEL EXPECTATION	**A3.4.**	Power Functions
EXPECTATION	**A3.4.3.**	Analyze the graphs of power functions, noting reflectional or rotational symmetry. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A3:**	Families of Functions
GRADE LEVEL EXPECTATION	**A3.5.**	Polynomial Functions
EXPECTATION	**A3.5.1.**	Write the symbolic form and sketch the graph of simple polynomial functions. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.5.2.**	Understand the effects of degree, leading coefficient, and number of real zeros on the graphs of polynomial functions of degree greater than 2.

		Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.5.3.**	Determine the maximum possible number of zeroes of a polynomial function and understand the relationship between the x-intercepts of the graph and the factored form of the function. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**L2:**	Calculation, Algorithms, and Estimation
GRADE LEVEL EXPECTATION	**L2.1.**	Calculation Using Real and Complex Numbers
EXPECTATION	**L2.1.3.**	Explain the exponential relationship between a number and its base 10 logarithm, and use it to relate rules of logarithms to those of exponents in expressions involving numbers. Module 05: Lesson 01: The Natural Logarithmic Function and Differentiation Module 05: Lesson 02: The Natural Logarithmic Function and Integration Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**A1:**	Expressions, Equations and Inequalities
GRADE LEVEL EXPECTATION	**A1.2.**	Solutions of Equations and Inequalities
EXPECTATION	**A1.2.5.**	Solve polynomial equations and equations involving rational expressions and justify steps in the solution. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A1.2.10.**	Use special values of the inverse trigonometric functions to solve trigonometric equations over specific intervals. Module 05: Lesson 06: Inverse Trigonometric Functions and Differentiation Module 05: Lesson 07: Inverse Trigonometric Functions and Integration Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**A2:**	Functions
GRADE LEVEL EXPECTATION	**A2.1.**	Definitions, Representations, and Attributes of Functions
EXPECTATION	**A2.1.1.**	Determine whether a relationship (given in contextual, symbolic, tabular, or graphical form) is a function, and identify its domain and range.

		Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
EXPECTATION	**A2.1.6.**	Identify the zeros of a function, the intervals where the values of a function are positive or negative, and describe the behavior of a function as x approaches positive or negative infinity, given the symbolic and graphical representations. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 01: Lesson 02: Finding Limits Graphically and Numerically Module 01: Lesson 03: Evaluating Limits Analytically Module 01: Lesson 04: Continuity and One-Sided Limits Module 01: Lesson 04Q: Quiz Module 01: Lesson 05: Infinite Limits Module 01: Lesson 06: Module One Review Module 01: Lesson 07: Module One Oral Review Module 01: Lesson 08: Module One Test Module 03: Lesson 05: Limits at Infinity Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**A2:**	Functions
GRADE LEVEL EXPECTATION	**A2.2.**	Operations and Transformations with Functions
EXPECTATION	**A2.2.1.**	Combine functions by addition, subtraction, multiplication, and division. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.2.**	Apply given transformations to parent functions, and represent symbolically. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.3.**	Recognize whether a function (given in tabular or graphical form) has an inverse, and recognize simple inverse pairs. Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test

		Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**A3:**	Families of Functions
GRADE LEVEL EXPECTATION	**A3.7.**	Trigonometric Functions
EXPECTATION	**A3.7.1.**	Use the unit circle to define sine and cosine; approximate values of sine and cosine; use sine and cosine to define the remaining trigonometric functions; explain why the trigonometric functions are periodic. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.2.**	Use the relationship between degree and radian measures to solve problems. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.3.**	Use the unit circle to determine the exact values of sine and cosine, for integer multiples of pi/6 and pi/4. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.4.**	Graph the sine and cosine functions; analyze graphs by noting domain, range, period, amplitude, and location of maxima and minima. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.5.**	Graph transformations of basic trigonometric functions (involving changes in period, amplitude, phase, and midline) and understand the relationship between constants in the formula and the transformed graph. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**G1:**	Figures and Their Properties
GRADE LEVEL EXPECTATION	**G1.7.**	Conic Sections and Their Properties
EXPECTATION	**G1.7.1.**	Find an equation of a circle given its center and radius; given the equation of a circle, find its center and radius. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**G1.7.3.**	Graph ellipses and hyperbolas with axes parallel to the x- and y-axes, given equations.

		Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.G.**	Geometry
STANDARD	**G1:**	Figures and Their Properties
GRADE LEVEL EXPECTATION	**G1.3.**	Triangles and Trigonometry
EXPECTATION	**G1.3.3.**	Determine the exact values of sine, cosine, and tangent for 0 degrees, 30 degrees, 45 degrees, 60 degrees, and their integer multiples and apply in various contexts. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam

Michigan Curriculum Standards
Mathematics
Grade 11 - Adopted 2007

STRAND / STANDARD CATEGORY	**MI.L.**	Quantitative Literacy and Logic (L)
STANDARD	**L2:**	Calculation, Algorithms, and Estimation: Students calculate fluently, estimate proficiently, and describe and use algorithms in appropriate situations (e.g., approximating solutions to equations). They understand the basic ideas of iteration and algorithms.
GRADE LEVEL EXPECTATION	**L2.1**	Calculation Using Real and Complex Numbers
EXPECTATION	**L2.1.3**	Explain the exponential relationship between a number and its base 10 logarithm and use it to relate rules of logarithms to those of exponents in expressions involving numbers. Module 05: Lesson 01: The Natural Logarithmic Function and Differentiation Module 05: Lesson 02: The Natural Logarithmic Function and Integration Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A1:**	Expressions, Equations, and Inequalities: Students recognize, construct, interpret, and evaluate expressions. They fluently transform symbolic expressions into equivalent forms. They determine appropriate techniques for solving each type of equation, inequality, or system of equations, apply the techniques correctly to solve, justify the steps in the solutions, and draw conclusions from the solutions. They know and apply common formulas.
GRADE LEVEL EXPECTATION	**A1.1**	Construction, Interpretation, and Manipulation of Expressions
EXPECTATION	**A1.1.7**	Transform trigonometric expressions into equivalent forms using basic identities such as sin^2 theta + cos^2 theta = 1 and tan^2 theta + 1 = sec^2 theta (Recommended) Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test

		Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A1:**	Expressions, Equations, and Inequalities: Students recognize, construct, interpret, and evaluate expressions. They fluently transform symbolic expressions into equivalent forms. They determine appropriate techniques for solving each type of equation, inequality, or system of equations, apply the techniques correctly to solve, justify the steps in the solutions, and draw conclusions from the solutions. They know and apply common formulas.
GRADE LEVEL EXPECTATION	**A1.2**	Solutions of Equations and Inequalities
EXPECTATION	**A1.2.3**	Solve linear and quadratic equations and inequalities including systems of up to three linear equations with three unknowns. Justify steps in the solution, and apply the quadratic formula appropriately. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A1.2.4**	Solve absolute value equations and inequalities, and justify steps in the solution. Module 00: Lesson 05: Real Numbers and the Real Line Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A1.2.5**	Solve polynomial equations and equations involving rational expressions, and justify steps in the solution. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A1.2.10**	Use special values of the inverse trigonometric functions to solve trigonometric equations over specific intervals. Module 05: Lesson 06: Inverse Trigonometric Functions and Differentiation Module 05: Lesson 07: Inverse Trigonometric Functions and Integration Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A2:**	Functions: Students understand Functions, their representations, and their attributes. They perform transformations, combine and compose Functions, and find inverses. Students classify Functions and know the characteristics of each family. They work with Functions with real coefficients fluently. Students construct or select a function to model a real-world situation in order to solve applied problems. They draw on their knowledge of families of Functions to do so.
GRADE LEVEL EXPECTATION	**A2.1**	Definitions, Representations, and Attributes of Functions
EXPECTATION	**A2.1.1**	Determine whether a relationship (given in contextual, symbolic, tabular, or graphical form) is a function and identify its domain and range. Module 00: Lesson 10: Functions and Their Graphs P.3

		Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
EXPECTATION	**A2.1.4**	Recognize that functions may be defined by different expressions over different intervals of their domains; such functions are piecewise-defined. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.1.6**	Identify the zeros of a function, the intervals where the values of a function are positive or negative, and describe the behavior of a function as x approaches positive or negative infinity, given the symbolic and graphical representations. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 01: Lesson 02: Finding Limits Graphically and Numerically Module 01: Lesson 03: Evaluating Limits Analytically Module 01: Lesson 04: Continuity and One-Sided Limits Module 01: Lesson 04Q: Quiz Module 01: Lesson 05: Infinite Limits Module 01: Lesson 06: Module One Review Module 01: Lesson 07: Module One Oral Review Module 01: Lesson 08: Module One Test Module 03: Lesson 05: Limits at Infinity Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A2:**	Functions: Students understand Functions, their representations, and their attributes. They perform transformations, combine and compose Functions, and find inverses. Students classify Functions and know the characteristics of each family. They work with Functions with real coefficients fluently. Students construct or select a function to model a real-world situation in order to solve applied problems. They draw on their knowledge of families of Functions to do so.
GRADE LEVEL EXPECTATION	**A2.2**	Operations and Transformations
EXPECTATION	**A2.2.1**	Combine functions by addition, subtraction, multiplication, and division. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.2**	Apply given transformations to basic functions and represent symbolically.

		Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.3**	Recognize whether a function (given in tabular or graphical form) has an inverse and recognize simple inverse pairs. Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
EXPECTATION	**A2.2.4**	If a function has an inverse, find the expression(s) for the inverse. (Recommended) Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
EXPECTATION	**A2.2.5**	Write an expression for the composition of one function with another; recognize component functions when a function is a composition of other functions. (Recommended) Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.6**	Know and interpret the function notation for inverses and verify that two functions are inverses using composition. (Recommended) Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A3:**	Families of Functions: Students study the symbolic and graphical forms of each function family. By recognizing the unique characteristics of each family, they can use them as tools for solving problems or for modeling real-world situations.
GRADE LEVEL EXPECTATION	**A3.1**	Lines and Linear Functions
EXPECTATION	**A3.1.1**	Write the symbolic forms of linear functions (standard, point-slope, and slope-intercept) given appropriate information, and convert between forms. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.2**	Graph lines (including those of the form x = h and y = k) given appropriate information. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.3**	Relate the coefficients in a linear function to the slope and x- and y-

		intercepts of its graph. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.4**	Find an equation of the line parallel or perpendicular to given line, through a given point; understand and use the facts that non-vertical parallel lines have equal slopes, and that non-vertical perpendicular lines have slopes that multiply to give -1. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A3:**	Families of Functions: Students study the symbolic and graphical forms of each function family. By recognizing the unique characteristics of each family, they can use them as tools for solving problems or for modeling real-world situations.
GRADE LEVEL EXPECTATION	**A3.3**	Quadratic Functions
EXPECTATION	**A3.3.1**	Write the symbolic form and sketch the graph of a quadratic function given appropriate information. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.3.2**	Identify the elements of a parabola (vertex, axis of symmetry, direction of opening) given its symbolic form or its graph, and relate these elements to the coefficient(s) of the symbolic form of the function. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.3.4**	Relate the number of real solutions of a quadratic equation to the graph of the associated quadratic function. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A3:**	Families of Functions: Students study the symbolic and graphical forms of each function family. By recognizing the unique characteristics of each family, they can use them as tools for solving problems or for modeling real-world situations.
GRADE LEVEL EXPECTATION	**A3.4**	Power Functions
EXPECTATION	**A3.4.3**	Analyze the graphs of power functions, noting reflectional or rotational symmetry. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 03: Lesson 06: A SumMAry of Curve Sketching

		Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A3:**	Families of Functions: Students study the symbolic and graphical forms of each function family. By recognizing the unique characteristics of each family, they can use them as tools for solving problems or for modeling real-world situations.
GRADE LEVEL EXPECTATION	**A3.5**	Polynomial Functions
EXPECTATION	**A3.5.1**	Write the symbolic form and sketch the graph of simple polynomial functions. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.5.2**	Understand the effects of degree, leading coefficient, and number of real zeros on the graphs of polynomial functions of degree greater than 2. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.5.3**	Determine the maximum possible number of zeros of a polynomial function, and understand the relationship between the x-intercepts of the graph and the factored form of the function. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A3:**	Families of Functions: Students study the symbolic and graphical forms of each function family. By recognizing the unique characteristics of each family, they can use them as tools for solving problems or for modeling real-world situations.
GRADE LEVEL EXPECTATION	**A3.7**	Trigonometric Functions
EXPECTATION	**A3.7.1**	Use the unit circle to define sine and cosine; approximate values of sine and cosine; use sine and cosine to define the remaining trigonometric functions; explain why the trigonometric functions are periodic. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.2**	Use the relationship between degree and radian measures to solve problems. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam

EXPECTATION	**A3.7.3**	Use the unit circle to determine the exact values of sine and cosine, for integer multiples of pi/6 and pi/4. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.4**	Graph the sine and cosine functions; analyze graphs by noting domain, range, period, amplitude, and location of maxima and minima. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.5**	Graph transformations of basic trigonometric functions (involving changes in period, amplitude, and midline) and understand the relationship between constants in the formula and the transformed graph. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.G.**	Geometry and Trigonometry (G)
STANDARD	**G1:**	Figures and Their Properties: Students represent basic geometric figures, polygons, and conic sections and apply their definitions and properties in solving problems and justifying arguments, including constructions and representations in the coordinate plane. Students represent three-dimensional figures, understand the concepts of volume and surface area, and use them to solve problems. They know and apply properties of common three-dimensional figures.
GRADE LEVEL EXPECTATION	**G1.3**	Triangles and Trigonometry
EXPECTATION	**G1.3.3**	Determine the exact values of sine, cosine, and tangent for 0 degrees, 30 degrees, 45 degrees, 60 degrees, and their integer multiples and apply in various contexts. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.G.**	Geometry and Trigonometry (G)
STANDARD	**G1:**	Figures and Their Properties: Students represent basic geometric figures, polygons, and conic sections and apply their definitions and properties in solving problems and justifying arguments, including constructions and representations in the coordinate plane. Students represent three-dimensional figures, understand the concepts of volume and surface area, and use them to solve problems. They know and apply properties of common three-dimensional figures.
GRADE LEVEL EXPECTATION	**G1.7**	Conic Sections and Their Properties
EXPECTATION	**G.1.7.1**	Find an equation of a circle given its center and radius; given the equation of a circle, find its center and radius. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam

EXPECTATION	**G1.7.3**	Graph ellipses and hyperbolas with axes parallel to the x- and y-axes, given equations. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**G1.7.4**	Know and use the relationship between the vertices and foci in and ellipse, the vertices and foci in a hyperbola, and the directrix and focus in a parabola, interpret these relationships in applied contexts. (Recommended) Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P1:**	Functions
GRADE LEVEL EXPECTATION	**P1.1**	Know and use a definition of a function to decide if a given relation is a function. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P1.2**	Perform algebraic operations (including compositions) on functions and apply transformations (translations, reflections, and rescalings). Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P1.3**	Write an expression for the composition of one given function with another and find the domain, range, and graph of the composite function. Recognize components when a function is composed of two or more elementary functions. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P1.4**	Determine whether a function (given symbolically or graphically) has an inverse and express the inverse (symbolically, if the function is given symbolically, or graphically, if given graphically) if it exists. Know and interpret the function notation for inverses. Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
GRADE LEVEL EXPECTATION	**P1.5**	Determine whether two given functions are inverses, using composition. Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
GRADE LEVEL EXPECTATION	**P1.6**	Identify and describe discontinuities of a function (e.g., greatest integer function, 1/x) and how these relate to the graph. Module 01: Lesson 04: Continuity and One-Sided Limits Module 01: Lesson 04Q: Quiz Module 01: Lesson 06: Module One Review Module 01: Lesson 07: Module One Oral Review Module 01: Lesson 08: Module One Test Module 02: Lesson 01: The Derivative and The Tangent Line Problem Module 02: Lesson 02: Basic Differentiation Rules and Rates of Change

		Module 02: Lesson 03: The Product and Quotient Rules Module 02: Lesson 03Q: Quiz Module 02: Lesson 04: The Chain Rule Module 02: Lesson 05: Implicit Differentiation Module 02: Lesson 06: Related Rates Module 02: Lesson 07: Module Two Review Module 02: Lesson 08: Module Two Oral Review Module 02: Lesson 09: Module Two Test Module 03: Lesson 02: Rolle's Theorem and the Mean Value of Theorem Module 03: Lesson 03: Increasing and Decreasing Functions Module 03: Lesson 04: Concavity and the Second Derivative Test Module 03: Lesson 04Q: Quiz Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam Module 05: Lesson 03: Inverse Functions Module 05: Lesson 04: Exponential Functions Module 05: Lesson 05: Bases Other Than e and Applications Module 05: Lesson 05Q: Quiz Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
GRADE LEVEL EXPECTATION	**P1.7**	Understand the concept of limit of a function as x approaches a number or infinity. Use the idea of limit to analyze a graph as it approaches an asymptote. Compute limits of simple functions (e.g., find the limit as x approaches 0 of f(x) = 1/x) informally. Module 01: Lesson 02: Finding Limits Graphically and Numerically Module 01: Lesson 03: Evaluating Limits Analytically Module 01: Lesson 04: Continuity and One-Sided Limits Module 01: Lesson 04Q: Quiz Module 01: Lesson 05: Infinite Limits Module 01: Lesson 06: Module One Review Module 01: Lesson 07: Module One Oral Review Module 01: Lesson 08: Module One Test Module 03: Lesson 05: Limits at Infinity Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P3:**	Quadratic Functions
GRADE LEVEL EXPECTATION	**P3.1**	Solve quadratic-type equations (e.g. e^(2x) - 4 e^(x+4)=0) by substitution. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P4:**	Polynomial Functions
GRADE LEVEL EXPECTATION	**P4.2**	Solve polynomial equations and inequalities of degree greater than or equal to three. Graph polynomial functions given in factored form using zeros and their multiplicities, testing the sign-on intervals and analyzing the function's large-scale behavior. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD	**MI.P.**	Precalculus

CATEGORY		
STANDARD	**P5:**	Rational Functions and Difference Quotients
GRADE LEVEL EXPECTATION	**P5.3**	Know and apply the definition and geometric interpretation of difference quotient. Simplify difference quotients and interpret difference quotients as rates of change and slopes of secant lines. Module 01: Lesson 01: A Preview of Calculus Module 02: Lesson 01: The Derivative and The Tangent Line Problem Module 02: Lesson 02: Basic Differentiation Rules and Rates of Change Module 02: Lesson 03: The Product and Quotient Rules Module 02: Lesson 03Q: Quiz Module 02: Lesson 04: The Chain Rule Module 02: Lesson 05: Implicit Differentiation Module 02: Lesson 06: Related Rates Module 02: Lesson 07: Module Two Review Module 02: Lesson 08: Module Two Oral Review Module 02: Lesson 09: Module Two Test Module 03: Lesson 08: Differentials Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P6:**	Trigonometric Functions
GRADE LEVEL EXPECTATION	**P6.1**	Define (using the unit circle), graph, and use all trigonometric functions of any angle. Convert between radian and degree measure. Calculate arc lengths in given circles. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P6.2**	Graph transformations of the sine and cosine functions (involving changes in amplitude, period, midline, and phase) and explain the relationship between constants in the formula and transformed graph. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P6.3**	Know basic properties of the inverse trigonometric functions sin^-1 x, cos^-1 x, tan^-1 x, including their domains and ranges. Recognize their graphs. Module 05: Lesson 06: Inverse Trigonometric Functions and Differentiation Module 05: Lesson 07: Inverse Trigonometric Functions and Integration Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
GRADE LEVEL EXPECTATION	**P6.4**	Know the basic trigonometric identities for sine, cosine, and tangent (e.g., the Pythagorean identities, sum and difference formulas, co-functions relationships, double-angle and half-angle formulas). Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P6.5**	Solve trigonometric equations using basic identities and inverse trigonometric functions. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P6.6**	Prove trigonometric identities and derive some of the basic ones (e.g., double-angle formula from sum and difference formulas, half-angle formula from double-angle formula, etc.).

		Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P8:**	Sequences, Series, and Mathematical Induction
GRADE LEVEL EXPECTATION	**P8.1**	Know, explain, and use sigma and factorial notation. Module 04: Lesson 02: Area Module 04: Lesson 02Q: Quiz 1 Module 04: Lesson 02X: Segment One Exam Module 04: Lesson 03: RieMAnn Sums and Definite Integrals Module 04: Lesson 04Q: Quiz 2 Module 04: Lesson 07: Module Four Review Module 04: Lesson 08: Module Four Oral Review Module 04: Lesson 09: Module Four Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P9:**	Polar Coordinates, Parameterizations, and Conic Sections
GRADE LEVEL EXPECTATION	**P9.8**	Identify parabolas, ellipses, and hyperbolas from equations, write the equations in standard form, and sketch an appropriate graph of the conic section. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P9.9**	Derive the equation for a conic section from given geometric information (e.g., find the equation of an ellipse given its two axes). Identify key characteristics (e.g. foci and asymptotes) of a conic section from its equation or graph. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**L1:**	Reasoning About Numbers, Systems, and Quantitative Situations
GRADE LEVEL EXPECTATION	**L1.2.**	Representations and Relationships
EXPECTATION	**L1.2.2.**	Interpret representations that reflect absolute value relationships. Module 00: Lesson 05: Real Numbers and the Real Line Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A1:**	Expressions, Equations, and Inequalities
GRADE LEVEL EXPECTATION	**A1.2.**	Solutions of Equations and Inequalities
EXPECTATION	**A1.2.3.**	Solve linear and quadratic equations and inequalities including systems of up to three linear equations with three unknowns. Justify steps in the solution, and apply the quadratic formula appropriately. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test

		Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A1.2.4.**	Solve absolute value equations and inequalities and justify steps in the solution. Module 00: Lesson 05: Real Numbers and the Real Line Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A2:**	Functions
GRADE LEVEL EXPECTATION	**A2.1.**	Definitions, Representations, and Attributes of Functions
EXPECTATION	**A2.1.1.**	Determine whether a relationship (given in contextual, symbolic, tabular, or graphical form) is a function and identify its domain and range. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
EXPECTATION	**A2.1.4.**	Recognize that functions may be defined by different expressions over different intervals of their domains; such functions are piecewise-defined. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.1.6.**	Identify the zeros of a function, the intervals where the values of a function are positive or negative, and describe the behavior of a function as x approaches positive or negative infinity, given the symbolic and graphical representations. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 01: Lesson 02: Finding Limits Graphically and Numerically Module 01: Lesson 03: Evaluating Limits Analytically Module 01: Lesson 04: Continuity and One-Sided Limits Module 01: Lesson 04Q: Quiz Module 01: Lesson 05: Infinite Limits Module 01: Lesson 06: Module One Review Module 01: Lesson 07: Module One Oral Review Module 01: Lesson 08: Module One Test Module 03: Lesson 05: Limits at Infinity Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND /	**MI.AI.**	Algebra I

STANDARD CATEGORY		
STANDARD	**A2:**	Functions
GRADE LEVEL EXPECTATION	**A2.2.**	Operations and Transformations with Functions
EXPECTATION	**A2.2.1.**	Combine functions by addition, subtraction, multiplication, and division. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.2.**	Apply given transformations to parent functions and represent symbolically. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.3.**	Determine whether a function (given in tabular or graphical form) has an inverse and recognize simple inverse pairs. Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A3:**	Families of Functions
GRADE LEVEL EXPECTATION	**A3.1.**	Lines and Linear Functions
EXPECTATION	**A3.1.1.**	Write the symbolic forms of linear functions (standard, point-slope, and slope-intercept) given appropriate information and convert between forms. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.2.**	Graph lines (including those of the form x = h and y = k) given appropriate information. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.3.**	Relate the coefficients in a linear function to the slope and x- and y-intercepts of its graph. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.4.**	Find an equation of the line parallel or perpendicular to given line, through a given point; understand and use the facts that non-vertical parallel lines have equal slopes, and that non-vertical perpendicular lines have slopes that multiply to give -1. Module 00: Lesson 09: Linear Models and Rates of Change P.2

		Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A3:**	Families of Functions
GRADE LEVEL EXPECTATION	**A3.3.**	Quadratic Functions
EXPECTATION	**A3.3.1.**	Write the symbolic form and sketch the graph of a quadratic function given appropriate information. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.3.2.**	Identify the elements of a parabola (vertex, axis of symmetry, direction of opening) given its symbolic form or its graph, and relate these elements to the coefficient(s) of the symbolic form of the function. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.3.4.**	Relate the number of real solutions of a quadratic equation to the graph of the associated quadratic function. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A3:**	Families of Functions
GRADE LEVEL EXPECTATION	**A3.4.**	Power Functions
EXPECTATION	**A3.4.3.**	Analyze the graphs of power functions, noting reflectional or rotational symmetry. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A3:**	Families of Functions
GRADE LEVEL EXPECTATION	**A3.5.**	Polynomial Functions
EXPECTATION	**A3.5.1.**	Write the symbolic form and sketch the graph of simple polynomial functions. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test

		Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.5.2.**	Understand the effects of degree, leading coefficient, and number of real zeros on the graphs of polynomial functions of degree greater than 2. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.5.3.**	Determine the maximum possible number of zeroes of a polynomial function and understand the relationship between the x-intercepts of the graph and the factored form of the function. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**L2:**	Calculation, Algorithms, and Estimation
GRADE LEVEL EXPECTATION	**L2.1.**	Calculation Using Real and Complex Numbers
EXPECTATION	**L2.1.3.**	Explain the exponential relationship between a number and its base 10 logarithm, and use it to relate rules of logarithms to those of exponents in expressions involving numbers. Module 05: Lesson 01: The Natural Logarithmic Function and Differentiation Module 05: Lesson 02: The Natural Logarithmic Function and Integration Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**A1:**	Expressions, Equations and Inequalities
GRADE LEVEL EXPECTATION	**A1.2.**	Solutions of Equations and Inequalities
EXPECTATION	**A1.2.5.**	Solve polynomial equations and equations involving rational expressions and justify steps in the solution. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A1.2.10.**	Use special values of the inverse trigonometric functions to solve trigonometric equations over specific intervals. Module 05: Lesson 06: Inverse Trigonometric Functions and Differentiation Module 05: Lesson 07: Inverse Trigonometric Functions and Integration Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**A2:**	Functions

GRADE LEVEL EXPECTATION	**A2.1.**	Definitions, Representations, and Attributes of Functions
EXPECTATION	**A2.1.1.**	Determine whether a relationship (given in contextual, symbolic, tabular, or graphical form) is a function, and identify its domain and range. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
EXPECTATION	**A2.1.6.**	Identify the zeros of a function, the intervals where the values of a function are positive or negative, and describe the behavior of a function as x approaches positive or negative infinity, given the symbolic and graphical representations. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 01: Lesson 02: Finding Limits Graphically and Numerically Module 01: Lesson 03: Evaluating Limits Analytically Module 01: Lesson 04: Continuity and One-Sided Limits Module 01: Lesson 04Q: Quiz Module 01: Lesson 05: Infinite Limits Module 01: Lesson 06: Module One Review Module 01: Lesson 07: Module One Oral Review Module 01: Lesson 08: Module One Test Module 03: Lesson 05: Limits at Infinity Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**A2:**	Functions
GRADE LEVEL EXPECTATION	**A2.2.**	Operations and Transformations with Functions
EXPECTATION	**A2.2.1.**	Combine functions by addition, subtraction, multiplication, and division. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.2.**	Apply given transformations to parent functions, and represent symbolically. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.3.**	Recognize whether a function (given in tabular or graphical form) has an

		inverse, and recognize simple inverse pairs. Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**A3:**	Families of Functions
GRADE LEVEL EXPECTATION	**A3.7.**	Trigonometric Functions
EXPECTATION	**A3.7.1.**	Use the unit circle to define sine and cosine; approximate values of sine and cosine; use sine and cosine to define the remaining trigonometric functions; explain why the trigonometric functions are periodic. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.2.**	Use the relationship between degree and radian measures to solve problems. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.3.**	Use the unit circle to determine the exact values of sine and cosine, for integer multiples of pi/6 and pi/4. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.4.**	Graph the sine and cosine functions; analyze graphs by noting domain, range, period, amplitude, and location of maxima and minima. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.5.**	Graph transformations of basic trigonometric functions (involving changes in period, amplitude, phase, and midline) and understand the relationship between constants in the formula and the transformed graph. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**G1:**	Figures and Their Properties
GRADE LEVEL EXPECTATION	**G1.7.**	Conic Sections and Their Properties
EXPECTATION	**G1.7.1.**	Find an equation of a circle given its center and radius; given the equation of a circle, find its center and radius. Module 00: Lesson 06: The Cartesian Plane

		Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**G1.7.3.**	Graph ellipses and hyperbolas with axes parallel to the x- and y-axes, given equations. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.G.**	Geometry
STANDARD	**G1:**	Figures and Their Properties
GRADE LEVEL EXPECTATION	**G1.3.**	Triangles and Trigonometry
EXPECTATION	**G1.3.3.**	Determine the exact values of sine, cosine, and tangent for 0 degrees, 30 degrees, 45 degrees, 60 degrees, and their integer multiples and apply in various contexts. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam

Michigan Curriculum Standards
Mathematics
Grade 12 - Adopted 2007

STRAND / STANDARD CATEGORY	**MI.L.**	Quantitative Literacy and Logic (L)
STANDARD	**L2:**	Calculation, Algorithms, and Estimation: Students calculate fluently, estimate proficiently, and describe and use algorithms in appropriate situations (e.g., approximating solutions to equations). They understand the basic ideas of iteration and algorithms.
GRADE LEVEL EXPECTATION	**L2.1**	Calculation Using Real and Complex Numbers
EXPECTATION	**L2.1.3**	Explain the exponential relationship between a number and its base 10 logarithm and use it to relate rules of logarithms to those of exponents in expressions involving numbers. Module 05: Lesson 01: The Natural Logarithmic Function and Differentiation Module 05: Lesson 02: The Natural Logarithmic Function and Integration Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A1:**	Expressions, Equations, and Inequalities: Students recognize, construct, interpret, and evaluate expressions. They fluently transform symbolic expressions into equivalent forms. They determine appropriate techniques for solving each type of equation, inequality, or system of equations, apply the techniques correctly to solve, justify the steps in the solutions, and draw conclusions from the solutions. They know and apply common formulas.
GRADE LEVEL EXPECTATION	**A1.1**	Construction, Interpretation, and Manipulation of Expressions
EXPECTATION	**A1.1.7**	Transform trigonometric expressions into equivalent forms using basic

		identities such as sin^2 theta + cos^2 theta = 1 and tan^2 theta + 1 = sec^2 theta (Recommended) Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A1:**	Expressions, Equations, and Inequalities: Students recognize, construct, interpret, and evaluate expressions. They fluently transform symbolic expressions into equivalent forms. They determine appropriate techniques for solving each type of equation, inequality, or system of equations, apply the techniques correctly to solve, justify the steps in the solutions, and draw conclusions from the solutions. They know and apply common formulas.
GRADE LEVEL EXPECTATION	**A1.2**	Solutions of Equations and Inequalities
EXPECTATION	**A1.2.3**	Solve linear and quadratic equations and inequalities including systems of up to three linear equations with three unknowns. Justify steps in the solution, and apply the quadratic formula appropriately. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A1.2.4**	Solve absolute value equations and inequalities, and justify steps in the solution. Module 00: Lesson 05: Real Numbers and the Real Line Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A1.2.5**	Solve polynomial equations and equations involving rational expressions, and justify steps in the solution. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A1.2.10**	Use special values of the inverse trigonometric functions to solve trigonometric equations over specific intervals. Module 05: Lesson 06: Inverse Trigonometric Functions and Differentiation Module 05: Lesson 07: Inverse Trigonometric Functions and Integration Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A2:**	Functions: Students understand Functions, their representations, and their attributes. They perform transformations, combine and compose Functions, and find inverses. Students classify Functions and know the characteristics of each family. They work with Functions with real coefficients fluently. Students construct or select a function to model a real-world situation in order to solve applied problems. They draw on their knowledge of families of Functions to do so.
GRADE LEVEL	**A2.1**	Definitions, Representations, and Attributes of Functions

EXPECTATION		
EXPECTATION	**A2.1.1**	Determine whether a relationship (given in contextual, symbolic, tabular, or graphical form) is a function and identify its domain and range. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
EXPECTATION	**A2.1.4**	Recognize that functions may be defined by different expressions over different intervals of their domains; such functions are piecewise-defined. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.1.6**	Identify the zeros of a function, the intervals where the values of a function are positive or negative, and describe the behavior of a function as x approaches positive or negative infinity, given the symbolic and graphical representations. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 01: Lesson 02: Finding Limits Graphically and Numerically Module 01: Lesson 03: Evaluating Limits Analytically Module 01: Lesson 04: Continuity and One-Sided Limits Module 01: Lesson 04Q: Quiz Module 01: Lesson 05: Infinite Limits Module 01: Lesson 06: Module One Review Module 01: Lesson 07: Module One Oral Review Module 01: Lesson 08: Module One Test Module 03: Lesson 05: Limits at Infinity Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A2:**	Functions: Students understand Functions, their representations, and their attributes. They perform transformations, combine and compose Functions, and find inverses. Students classify Functions and know the characteristics of each family. They work with Functions with real coefficients fluently. Students construct or select a function to model a real-world situation in order to solve applied problems. They draw on their knowledge of families of Functions to do so.
GRADE LEVEL EXPECTATION	**A2.2**	Operations and Transformations
EXPECTATION	**A2.2.1**	Combine functions by addition, subtraction, multiplication, and division.

		Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.2**	Apply given transformations to basic functions and represent symbolically. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.3**	Recognize whether a function (given in tabular or graphical form) has an inverse and recognize simple inverse pairs. Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
EXPECTATION	**A2.2.4**	If a function has an inverse, find the expression(s) for the inverse. (Recommended) Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
EXPECTATION	**A2.2.5**	Write an expression for the composition of one function with another; recognize component functions when a function is a composition of other functions. (Recommended) Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.6**	Know and interpret the function notation for inverses and verify that two functions are inverses using composition. (Recommended) Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A3:**	Families of Functions: Students study the symbolic and graphical forms of each function family. By recognizing the unique characteristics of each family, they can use them as tools for solving problems or for modeling real-world situations.
GRADE LEVEL EXPECTATION	**A3.1**	Lines and Linear Functions
EXPECTATION	**A3.1.1**	Write the symbolic forms of linear functions (standard, point-slope, and slope-intercept) given appropriate information, and convert between forms. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.2**	Graph lines (including those of the form x = h and y = k) given appropriate information.

		Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.3**	Relate the coefficients in a linear function to the slope and x- and y-intercepts of its graph. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.4**	Find an equation of the line parallel or perpendicular to given line, through a given point; understand and use the facts that non-vertical parallel lines have equal slopes, and that non-vertical perpendicular lines have slopes that multiply to give -1. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A3:**	Families of Functions: Students study the symbolic and graphical forms of each function family. By recognizing the unique characteristics of each family, they can use them as tools for solving problems or for modeling real-world situations.
GRADE LEVEL EXPECTATION	**A3.3**	Quadratic Functions
EXPECTATION	**A3.3.1**	Write the symbolic form and sketch the graph of a quadratic function given appropriate information. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.3.2**	Identify the elements of a parabola (vertex, axis of symmetry, direction of opening) given its symbolic form or its graph, and relate these elements to the coefficient(s) of the symbolic form of the function. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.3.4**	Relate the number of real solutions of a quadratic equation to the graph of the associated quadratic function. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A3:**	Families of Functions: Students study the symbolic and graphical forms of each function family. By recognizing the unique characteristics of each family, they can use them as tools for solving problems or for modeling real-world situations.
GRADE LEVEL EXPECTATION	**A3.4**	Power Functions

EXPECTATION	**A3.4.3**	Analyze the graphs of power functions, noting reflectional or rotational symmetry. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A3:**	Families of Functions: Students study the symbolic and graphical forms of each function family. By recognizing the unique characteristics of each family, they can use them as tools for solving problems or for modeling real-world situations.
GRADE LEVEL EXPECTATION	**A3.5**	Polynomial Functions
EXPECTATION	**A3.5.1**	Write the symbolic form and sketch the graph of simple polynomial functions. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.5.2**	Understand the effects of degree, leading coefficient, and number of real zeros on the graphs of polynomial functions of degree greater than 2. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.5.3**	Determine the maximum possible number of zeros of a polynomial function, and understand the relationship between the x-intercepts of the graph and the factored form of the function. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.A.**	Algebra and Functions (A)
STANDARD	**A3:**	Families of Functions: Students study the symbolic and graphical forms of each function family. By recognizing the unique characteristics of each family, they can use them as tools for solving problems or for modeling real-world situations.
GRADE LEVEL EXPECTATION	**A3.7**	Trigonometric Functions
EXPECTATION	**A3.7.1**	Use the unit circle to define sine and cosine; approximate values of sine and cosine; use sine and cosine to define the remaining trigonometric functions; explain why the trigonometric functions are periodic. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.2**	Use the relationship between degree and radian measures to solve

		problems. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.3**	Use the unit circle to determine the exact values of sine and cosine, for integer multiples of pi/6 and pi/4. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.4**	Graph the sine and cosine functions; analyze graphs by noting domain, range, period, amplitude, and location of maxima and minima. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.5**	Graph transformations of basic trigonometric functions (involving changes in period, amplitude, and midline) and understand the relationship between constants in the formula and the transformed graph. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.G.**	Geometry and Trigonometry (G)
STANDARD	**G1:**	Figures and Their Properties: Students represent basic geometric figures, polygons, and conic sections and apply their definitions and properties in solving problems and justifying arguments, including constructions and representations in the coordinate plane. Students represent three-dimensional figures, understand the concepts of volume and surface area, and use them to solve problems. They know and apply properties of common three-dimensional figures.
GRADE LEVEL EXPECTATION	**G1.3**	Triangles and Trigonometry
EXPECTATION	**G1.3.3**	Determine the exact values of sine, cosine, and tangent for 0 degrees, 30 degrees, 45 degrees, 60 degrees, and their integer multiples and apply in various contexts. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.G.**	Geometry and Trigonometry (G)
STANDARD	**G1:**	Figures and Their Properties: Students represent basic geometric figures, polygons, and conic sections and apply their definitions and properties in solving problems and justifying arguments, including constructions and representations in the coordinate plane. Students represent three-dimensional figures, understand the concepts of volume and surface area, and use them to solve problems. They know and apply properties of common three-dimensional figures.
GRADE LEVEL EXPECTATION	**G1.7**	Conic Sections and Their Properties
EXPECTATION	**G.1.7.1**	Find an equation of a circle given its center and radius; given the

		equation of a circle, find its center and radius. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**G1.7.3**	Graph ellipses and hyperbolas with axes parallel to the x- and y-axes, given equations. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**G1.7.4**	Know and use the relationship between the vertices and foci in and ellipse, the vertices and foci in a hyperbola, and the directrix and focus in a parabola, interpret these relationships in applied contexts. (Recommended) Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P1:**	Functions
GRADE LEVEL EXPECTATION	**P1.1**	Know and use a definition of a function to decide if a given relation is a function. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P1.2**	Perform algebraic operations (including compositions) on functions and apply transformations (translations, reflections, and rescalings). Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P1.3**	Write an expression for the composition of one given function with another and find the domain, range, and graph of the composite function. Recognize components when a function is composed of two or more elementary functions. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P1.4**	Determine whether a function (given symbolically or graphically) has an inverse and express the inverse (symbolically, if the function is given symbolically, or graphically, if given graphically) if it exists. Know and interpret the function notation for inverses. Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
GRADE LEVEL EXPECTATION	**P1.5**	Determine whether two given functions are inverses, using composition. Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
GRADE LEVEL EXPECTATION	**P1.6**	Identify and describe discontinuities of a function (e.g., greatest integer function, 1/x) and how these relate to the graph.

		Module 01: Lesson 04: Continuity and One-Sided Limits Module 01: Lesson 04Q: Quiz Module 01: Lesson 06: Module One Review Module 01: Lesson 07: Module One Oral Review Module 01: Lesson 08: Module One Test Module 02: Lesson 01: The Derivative and The Tangent Line Problem Module 02: Lesson 02: Basic Differentiation Rules and Rates of Change Module 02: Lesson 03: The Product and Quotient Rules Module 02: Lesson 03Q: Quiz Module 02: Lesson 04: The Chain Rule Module 02: Lesson 05: Implicit Differentiation Module 02: Lesson 06: Related Rates Module 02: Lesson 07: Module Two Review Module 02: Lesson 08: Module Two Oral Review Module 02: Lesson 09: Module Two Test Module 03: Lesson 02: Rolle's Theorem and the Mean Value of Theorem Module 03: Lesson 03: Increasing and Decreasing Functions Module 03: Lesson 04: Concavity and the Second Derivative Test Module 03: Lesson 04Q: Quiz Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam Module 05: Lesson 03: Inverse Functions Module 05: Lesson 04: Exponential Functions Module 05: Lesson 05: Bases Other Than e and Applications Module 05: Lesson 05Q: Quiz Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
GRADE LEVEL EXPECTATION	**P1.7**	Understand the concept of limit of a function as x approaches a number or infinity. Use the idea of limit to analyze a graph as it approaches an asymptote. Compute limits of simple functions (e.g., find the limit as x approaches 0 of f(x) = 1/x) informally. Module 01: Lesson 02: Finding Limits Graphically and Numerically Module 01: Lesson 03: Evaluating Limits Analytically Module 01: Lesson 04: Continuity and One-Sided Limits Module 01: Lesson 04Q: Quiz Module 01: Lesson 05: Infinite Limits Module 01: Lesson 06: Module One Review Module 01: Lesson 07: Module One Oral Review Module 01: Lesson 08: Module One Test Module 03: Lesson 05: Limits at Infinity Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P3:**	Quadratic Functions
GRADE LEVEL EXPECTATION	**P3.1**	Solve quadratic-type equations (e.g. e^(2x) - 4 e^(x+4)=0) by substitution. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P4:**	Polynomial Functions
GRADE LEVEL EXPECTATION	**P4.2**	Solve polynomial equations and inequalities of degree greater than or equal to three. Graph polynomial functions given in factored form using zeros and their multiplicities, testing the sign-on intervals and analyzing the function's large-scale behavior.

		Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P5:**	Rational Functions and Difference Quotients
GRADE LEVEL EXPECTATION	**P5.3**	Know and apply the definition and geometric interpretation of difference quotient. Simplify difference quotients and interpret difference quotients as rates of change and slopes of secant lines. Module 01: Lesson 01: A Preview of Calculus Module 02: Lesson 01: The Derivative and The Tangent Line Problem Module 02: Lesson 02: Basic Differentiation Rules and Rates of Change Module 02: Lesson 03: The Product and Quotient Rules Module 02: Lesson 03Q: Quiz Module 02: Lesson 04: The Chain Rule Module 02: Lesson 05: Implicit Differentiation Module 02: Lesson 06: Related Rates Module 02: Lesson 07: Module Two Review Module 02: Lesson 08: Module Two Oral Review Module 02: Lesson 09: Module Two Test Module 03: Lesson 08: Differentials Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P6:**	Trigonometric Functions
GRADE LEVEL EXPECTATION	**P6.1**	Define (using the unit circle), graph, and use all trigonometric functions of any angle. Convert between radian and degree measure. Calculate arc lengths in given circles. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P6.2**	Graph transformations of the sine and cosine functions (involving changes in amplitude, period, midline, and phase) and explain the relationship between constants in the formula and transformed graph. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P6.3**	Know basic properties of the inverse trigonometric functions sin^-1 x, cos^-1 x, tan^-1 x, including their domains and ranges. Recognize their graphs. Module 05: Lesson 06: Inverse Trigonometric Functions and Differentiation Module 05: Lesson 07: Inverse Trigonometric Functions and Integration Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
GRADE LEVEL EXPECTATION	**P6.4**	Know the basic trigonometric identities for sine, cosine, and tangent (e.g., the Pythagorean identities, sum and difference formulas, co-functions relationships, double-angle and half-angle formulas). Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P6.5**	Solve trigonometric equations using basic identities and inverse trigonometric functions. Module 00: Lesson 07: Trigonometry Review

		Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P6.6**	Prove trigonometric identities and derive some of the basic ones (e.g., double-angle formula from sum and difference formulas, half-angle formula from double-angle formula, etc.). Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P8:**	Sequences, Series, and Mathematical Induction
GRADE LEVEL EXPECTATION	**P8.1**	Know, explain, and use sigma and factorial notation. Module 04: Lesson 02: Area Module 04: Lesson 02Q: Quiz 1 Module 04: Lesson 02X: Segment One Exam Module 04: Lesson 03: RieMAnn Sums and Definite Integrals Module 04: Lesson 04Q: Quiz 2 Module 04: Lesson 07: Module Four Review Module 04: Lesson 08: Module Four Oral Review Module 04: Lesson 09: Module Four Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.P.**	Precalculus
STANDARD	**P9:**	Polar Coordinates, Parameterizations, and Conic Sections
GRADE LEVEL EXPECTATION	**P9.8**	Identify parabolas, ellipses, and hyperbolas from equations, write the equations in standard form, and sketch an appropriate graph of the conic section. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
GRADE LEVEL EXPECTATION	**P9.9**	Derive the equation for a conic section from given geometric information (e.g., find the equation of an ellipse given its two axes). Identify key characteristics (e.g. foci and asymptotes) of a conic section from its equation or graph. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**L1:**	Reasoning About Numbers, Systems, and Quantitative Situations
GRADE LEVEL EXPECTATION	**L1.2.**	Representations and Relationships
EXPECTATION	**L1.2.2.**	Interpret representations that reflect absolute value relationships. Module 00: Lesson 05: Real Numbers and the Real Line Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A1:**	Expressions, Equations, and Inequalities
GRADE LEVEL EXPECTATION	**A1.2.**	Solutions of Equations and Inequalities
EXPECTATION	**A1.2.3.**	Solve linear and quadratic equations and inequalities including systems

		of up to three linear equations with three unknowns. Justify steps in the solution, and apply the quadratic formula appropriately. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A1.2.4.**	Solve absolute value equations and inequalities and justify steps in the solution. Module 00: Lesson 05: Real Numbers and the Real Line Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A2:**	Functions
GRADE LEVEL EXPECTATION	**A2.1.**	Definitions, Representations, and Attributes of Functions
EXPECTATION	**A2.1.1.**	Determine whether a relationship (given in contextual, symbolic, tabular, or graphical form) is a function and identify its domain and range. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
EXPECTATION	**A2.1.4.**	Recognize that functions may be defined by different expressions over different intervals of their domains; such functions are piecewise-defined. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.1.6.**	Identify the zeros of a function, the intervals where the values of a function are positive or negative, and describe the behavior of a function as x approaches positive or negative infinity, given the symbolic and graphical representations. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 01: Lesson 02: Finding Limits Graphically and Numerically Module 01: Lesson 03: Evaluating Limits Analytically Module 01: Lesson 04: Continuity and One-Sided Limits Module 01: Lesson 04Q: Quiz Module 01: Lesson 05: Infinite Limits Module 01: Lesson 06: Module One Review Module 01: Lesson 07: Module One Oral Review Module 01: Lesson 08: Module One Test Module 03: Lesson 05: Limits at Infinity

		Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A2:**	Functions
GRADE LEVEL EXPECTATION	**A2.2.**	Operations and Transformations with Functions
EXPECTATION	**A2.2.1.**	Combine functions by addition, subtraction, multiplication, and division. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.2.**	Apply given transformations to parent functions and represent symbolically. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.3.**	Determine whether a function (given in tabular or graphical form) has an inverse and recognize simple inverse pairs. Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A3:**	Families of Functions
GRADE LEVEL EXPECTATION	**A3.1.**	Lines and Linear Functions
EXPECTATION	**A3.1.1.**	Write the symbolic forms of linear functions (standard, point-slope, and slope-intercept) given appropriate information and convert between forms. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.2.**	Graph lines (including those of the form x = h and y = k) given appropriate information. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.3.**	Relate the coefficients in a linear function to the slope and x- and y-intercepts of its graph. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.1.4.**	Find an equation of the line parallel or perpendicular to given line,

		through a given point; understand and use the facts that non-vertical parallel lines have equal slopes, and that non-vertical perpendicular lines have slopes that multiply to give -1. Module 00: Lesson 09: Linear Models and Rates of Change P.2 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A3:**	Families of Functions
GRADE LEVEL EXPECTATION	**A3.3.**	Quadratic Functions
EXPECTATION	**A3.3.1.**	Write the symbolic form and sketch the graph of a quadratic function given appropriate information. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.3.2.**	Identify the elements of a parabola (vertex, axis of symmetry, direction of opening) given its symbolic form or its graph, and relate these elements to the coefficient(s) of the symbolic form of the function. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.3.4.**	Relate the number of real solutions of a quadratic equation to the graph of the associated quadratic function. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A3:**	Families of Functions
GRADE LEVEL EXPECTATION	**A3.4.**	Power Functions
EXPECTATION	**A3.4.3.**	Analyze the graphs of power functions, noting reflectional or rotational symmetry. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AI.**	Algebra I
STANDARD	**A3:**	Families of Functions
GRADE LEVEL EXPECTATION	**A3.5.**	Polynomial Functions
EXPECTATION	**A3.5.1.**	Write the symbolic form and sketch the graph of simple polynomial

		functions. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.5.2.**	Understand the effects of degree, leading coefficient, and number of real zeros on the graphs of polynomial functions of degree greater than 2. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.5.3.**	Determine the maximum possible number of zeroes of a polynomial function and understand the relationship between the x-intercepts of the graph and the factored form of the function. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**L2:**	Calculation, Algorithms, and Estimation
GRADE LEVEL EXPECTATION	**L2.1.**	Calculation Using Real and Complex Numbers
EXPECTATION	**L2.1.3.**	Explain the exponential relationship between a number and its base 10 logarithm, and use it to relate rules of logarithms to those of exponents in expressions involving numbers. Module 05: Lesson 01: The Natural Logarithmic Function and Differentiation Module 05: Lesson 02: The Natural Logarithmic Function and Integration Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**A1:**	Expressions, Equations and Inequalities
GRADE LEVEL EXPECTATION	**A1.2.**	Solutions of Equations and Inequalities
EXPECTATION	**A1.2.5.**	Solve polynomial equations and equations involving rational expressions and justify steps in the solution. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A1.2.10.**	Use special values of the inverse trigonometric functions to solve trigonometric equations over specific intervals. Module 05: Lesson 06: Inverse Trigonometric Functions and Differentiation Module 05: Lesson 07: Inverse Trigonometric Functions and Integration Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam

STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**A2:**	Functions
GRADE LEVEL EXPECTATION	**A2.1.**	Definitions, Representations, and Attributes of Functions
EXPECTATION	**A2.1.1.**	Determine whether a relationship (given in contextual, symbolic, tabular, or graphical form) is a function, and identify its domain and range. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 03: Lesson 06: A SumMAry of Curve Sketching Module 03: Lesson 07: Optimization Problems Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
EXPECTATION	**A2.1.6.**	Identify the zeros of a function, the intervals where the values of a function are positive or negative, and describe the behavior of a function as x approaches positive or negative infinity, given the symbolic and graphical representations. Module 00: Lesson 08: Graphs and Models P.1 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 01: Lesson 02: Finding Limits Graphically and Numerically Module 01: Lesson 03: Evaluating Limits Analytically Module 01: Lesson 04: Continuity and One-Sided Limits Module 01: Lesson 04Q: Quiz Module 01: Lesson 05: Infinite Limits Module 01: Lesson 06: Module One Review Module 01: Lesson 07: Module One Oral Review Module 01: Lesson 08: Module One Test Module 03: Lesson 05: Limits at Infinity Module 03: Lesson 09: Module Three Review Module 03: Lesson 10: Module Three Oral Review Module 03: Lesson 11: Module Three Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**A2:**	Functions
GRADE LEVEL EXPECTATION	**A2.2.**	Operations and Transformations with Functions
EXPECTATION	**A2.2.1.**	Combine functions by addition, subtraction, multiplication, and division. Module 00: Lesson 10: Functions and Their Graphs P.3 Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.2.**	Apply given transformations to parent functions, and represent symbolically. Module 00: Lesson 10: Functions and Their Graphs P.3

		Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A2.2.3.**	Recognize whether a function (given in tabular or graphical form) has an inverse, and recognize simple inverse pairs. Module 05: Lesson 03: Inverse Functions Module 05: Lesson 08: Module Five Review Module 05: Lesson 09: Module Five Oral Review Module 05: Lesson 10: Module Five Test Module 08: Lesson 05: Second Segment Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**A3:**	Families of Functions
GRADE LEVEL EXPECTATION	**A3.7.**	Trigonometric Functions
EXPECTATION	**A3.7.1.**	Use the unit circle to define sine and cosine; approximate values of sine and cosine; use sine and cosine to define the remaining trigonometric functions; explain why the trigonometric functions are periodic. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.2.**	Use the relationship between degree and radian measures to solve problems. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.3.**	Use the unit circle to determine the exact values of sine and cosine, for integer multiples of pi/6 and pi/4. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.4.**	Graph the sine and cosine functions; analyze graphs by noting domain, range, period, amplitude, and location of maxima and minima. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**A3.7.5.**	Graph transformations of basic trigonometric functions (involving changes in period, amplitude, phase, and midline) and understand the relationship between constants in the formula and the transformed graph. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.AII.**	Algebra II
STANDARD	**G1:**	Figures and Their Properties
GRADE LEVEL EXPECTATION	**G1.7.**	Conic Sections and Their Properties

EXPECTATION	**G1.7.1.**	Find an equation of a circle given its center and radius; given the equation of a circle, find its center and radius. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
EXPECTATION	**G1.7.3.**	Graph ellipses and hyperbolas with axes parallel to the x- and y-axes, given equations. Module 00: Lesson 06: The Cartesian Plane Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam
STRAND / STANDARD CATEGORY	**MI.G.**	Geometry
STANDARD	**G1:**	Figures and Their Properties
GRADE LEVEL EXPECTATION	**G1.3.**	Triangles and Trigonometry
EXPECTATION	**G1.3.3.**	Determine the exact values of sine, cosine, and tangent for 0 degrees, 30 degrees, 45 degrees, 60 degrees, and their integer multiples and apply in various contexts. Module 00: Lesson 07: Trigonometry Review Module 00: Lesson 11: Chapter Zero Review Module 00: Lesson 12: Module Zero Test Module 04: Lesson 02X: Segment One Exam