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Integrated III High School Math Solution
Correlation to the 2018 Tennessee Academic Standards

CARNEGIE LEARNING

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M3.N.Q.A.1	Identify, interpret, and justify appropriate quantities for the purpose of descriptive modeling.	Textbook	1: Searching for Patterns	1: Quantities and Relationships	1: A Picture Is Worth a Thousand Words: Understanding Quantities and Their Relationships pp. M1-7A–M1-20
			3: Investigating Growth and Decay	2: Using Exponential Equations	3: Tea and Carbon Dioxide: Modeling Using Exponential Functions pp. M3-87A–M3-96
					4: BAC Is BAD News: Choosing a Function to Model BAC pp. M3-97A–M3-106
M3.A.SSE.A.1	Use the structure of an expression to identify ways to rewrite it.	Textbook	1: Analyzing Structure	1: Exploring and Analyzing Patterns	4: True to Form: Forms of Quadratic Functions pp. M1-51A–M1-78
			2: Developing Structural Similarities	1: Relating Factors and Zeros	1: Satisfactory Factoring: Factoring Polynomials to Identify Zeros pp. M2-7A–M2-22
					2: Divide and Conquer: Polynomial Division pp. M2-23A–M2-42
				3: Rational Functions	4: Must Be a Rational Explanations: Operations with Rational Expressions pp. M2-183A–M2-200
					5: Thunder. Thun- Thun- Thunder.: Solving Problems with Rational Equations pp. M2-201A–M2-222
			4: Investigating Periodic Functions	2: Trigonometric Equations	1: Chasing Theta: Solving Trigonometric Equations pp. M4-111A–M4-124
		MATHia Software	1: Analyzing Structure	3: Forms of Quadratic Functions	1: Examining the Shape and Structure of Quadratic Functions
			2: Developing Structural Similarities	2: Solving Polynomials	1: Factoring Higher Order Polynomials
M3.A.SSE.B.2a	Use the properties of exponents to rewrite expressions for exponential functions.	Textbook	3: Inverting Functions	2: Exponential and Logarithmic Functions	4: I Like to Move It: Transformations of Exponential and Logarithmic Functions pp. M3-137A–M3-158
M3.A.SSE.B.3	Recognize a finite geometric series (when the common ratio is not 1), and use the sum formula to solve problems in context.	Textbook	3: Inverting Functions	4: Applications of Growth Modeling	1: Series Are Sums: Geometric Series pp. M3-249A–M3-266
		MATHia Software	3: Inverting Functions	6: Finite Geometric Solutions	1: Introduction to Finite Geometric Series
					2: Problem Solving using Finite Geometric Series

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M3.A.APR.A.1	Know and apply the Remainder Theorem: For a polynomial p(x) and a number a, the remainder on division by x – a is p(a), so p(a) = 0 if and only if (x – a) is a factor of p(x).	Textbook	2: Developing Structural Similarities	1: Relating Factors and Zeros	2: Divide and Conquer: Polynomial Division pp. M2-23A–M2-42
		MATHia Software	2: Developing Structural Similarities	2: Solving Polynomials	2: Solving Polynomial Functions
M3.A.APR.A.2	Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.	Textbook	1: Analyzing Structure	2: Composing and Decomposing Figures and Functions	3: Blame It on the Rain: Modeling with Functions pp. M1-135A-M1-144
					6: The Zero's the Hero: Decomposing Cubic Functions pp. M1-173A–M1-188
				3: Characteristics of Polynomial Functions	3: Poly-Wog: Key Characteristics of Polynomial Functions pp. M1-233A-M1-256
					4: Function Construction: Building Cubic and Quartic Functions pp. M1-257A-M1-276
			2: Developing Structural Similarities	1: Relating Factors and Zeros	1: Satisfactory Factoring: Factoring Polynomials to Identify Zeros pp. M2-7A–M2-22
		MATHia Software	1: Analyzing Structure	6: Characteristics of Polynomial Functions	5: Identifying Zeros of Polynomials
					6: Using Zeros to Sketch a Graph of Polynomial
M3.A.APR.B.3	Know and use polynomial identities to describe numerical relationships.	Textbook	2: Developing Structural Similarities	2: Polynomial Models	1: Not a Case of Mistaken Identity: Exploring Polynomial Identities pp. M2-77A–M2-90
M3.A.APR.C.4	Rewrite rational expressions in different forms.	Textbook	2: Developing Structural Similarities	3: Rational Functions	3: There's a Hole in My Function!: Graphical Discontinuities pp. M2-167A–M2-182
					4: Must Be a Rational Explanations: Operations with Rational Expressions pp. M2-183A–M2-200
		MATHia Software	2: Developing Structural Similarities	1: Polynomial Operations	4: Synthetic Division
				4: Rational Expressions and Equations	1: Simplifying Rational Expressions
					2: Multiplying and Dividing Rational Expressions
					3: Adding and Subtracting Rational Expressions
				5: Rational Models	1: Modeling Rational Functions

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M3.A.CED.A.1	Create equations and inequalities in one variable and use them to solve problems.	Textbook	1: Analyzing Structure	1: Exploring and Analyzing Patterns	2: The Cat's Out of the Bag!: Generating Algebraic Expressions pp. M1-17A–M1-30
					3: Samesies: Comparing Multiple Representations of Functions pp. M1-31A–M1-50
					4: True to Form: Forms of Quadratic Functions pp. M1-51A–M1-78
			2: Developing Structural Similarities	1: Relating Factors and Zeros	4: Unequal Equals: Solving Polynomial Inequalities pp. M2-51A–M2-64
				3: Rational Functions	5: Thunder. Thun- Thun- Thunder.: Solving Problems with Rational Equations pp. M2-201A–M2-222
					6: 16 Tons and What Do You Get?: Solving Work, Mixture, Distance, and Cost Problems pp. M2-223A–M2-238
		MATHia Software	2: Developing Structural Similarities	2: Solving Polynomials	3: Solving Polynomial Inequalities
				5: Rational Models	2: Using Rational Models
					3: Solving Work, Mixture, and Distance Problems
					4: Modeling and Solving with Rational Functions
M3.A.CED.A.2	Create equations in two or more variables to represent relationships between quantities; graph equations with two variables on coordinate axes with labels and scales.	Textbook	1: Analyzing Structure	1: Exploring and Analyzing Patterns	4: True to Form: Forms of Quadratic Functions pp. M1-51A–M1-78
M3.A.CED.A.3	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.	Textbook	3: Inverting Functions	1: Radical Functions	5: Into the Unknown: Solving Radical Equations pp. M3-71A–M3-80
M3.A.REI.A.1	Explain each step in solving an equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.	Textbook	2: Developing Structural Similarities	3: Rational Functions	5: Thunder. Thun- Thun- Thunder.: Solving Problems with Rational Equations pp. M2-201A–M2-222
					6: 16 Tons and What Do You Get?: Solving Work, Mixture, Distance, and Cost Problems pp. M2-223A–M2-238
			4: Investigating Periodic Functions	2: Trigonometric Equations	1: Chasing Theta: Solving Trigonometric Equations pp. M4-111A–M4-124

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M3.A.REI.A.2	Solve rational and radical equations in one variable, and identify extraneous solutions when they exist.	Textbook	2: Developing Structural Similarities	3: Rational Functions	5: Thunder. Thun- Thun- Thunder.: Solving Problems with Rational Equations pp. M2-201A–M2-222
					6: 16 Tons and What Do You Get?: Solving Work, Mixture, Distance, and Cost Problems pp. M2-223A–M2-238
			3: Inverting Functions	1: Radical Functions	5: Into the Unknown: Solving Radical Equations pp. M3-71A–M3-80
		MATHia Software	2: Developing Structural Similarities	3: Rational Functions	2: Modeling Ratios as Rational Functions
				4: Rational Expressions and Equations	4: Solving Rational Equations that Result in Linear Equations
M3.A.REI.B.3	Explain why the x-coordinates of the points where the graphs of the equations y = f(x) and y = g(x) intersect are the solutions of the equation f(x) = g(x); find the approximate solutions using technology.*	Textbook	1: Analyzing Structure	2: Composing and Decomposing Figures and Functions	3: Blame It on the Rain: Modeling with Functions pp. M1-135A-M1-144
				3: Characteristics of Polynomial Functions	5: Level Up: Analyzing Polynomial Functions pp. M1-277A-M1-288
			2: Developing Structural Similarities	3: Rational Functions	5: Thunder. Thun- Thun- Thunder.: Solving Problems with Rational Equations pp. M2-201A–M2-222
			3: Inverting Functions	2: Exponential and Logarithmic Functions	1: Half-Life: Comparing Linear and Exponential Functions pp. M3-93A–M3-106
					2: Pert and Nert: Properties of Exponential Graphs pp. M3-107A–M3-124
				3: Exponential and Logarithmic Equations	3: More Than One Way to Crack an Egg: Solving Exponential Equations pp. M3-197A–M3-206

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M3.F.IF.A.1	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.*	Textbook	1: Analyzing Structure	1: Exploring and Analyzing Patterns	2: The Cat's Out of the Bag!: Generating Algebraic Expressions pp. M1-17A–M1-30
					4: True to Form: Forms of Quadratic Functions pp. M1-51A–M1-78
				2: Composing and Decomposing Figures and Functions	5: Planting the Seeds: Exploring Cubic Functions pp. M1-159A-M1-172
				3: Characteristics of Polynomial Functions	3: Poly-Wog: Key Characteristics of Polynomial Functions pp. M1-233A-M1-256
					5: Level Up: Analyzing Polynomial Functions pp. M1-277A-M1-288
			2: Developing Structural Similarities	2: Polynomial Models	3: Modeling Gig: Modeling with Polynomial Functions and Data pp. M2-103A–M2-117
			3: Inverting Functions	1: Radical Functions	1: Strike That, Invert It: Inverses of Power Functions pp. M3-7A–M3-18
					2: Such a Rad Lesson: Radical Functions pp. M3-19A–M3-40
				2: Exponential and Logarithmic Functions	1: Half-Life: Comparing Linear and Exponential Functions pp. M3-93A–M3-106
					2: Pert and Nert: Properties of Exponential Graphs pp. M3-107A–M3-124
					3: Return of the Inverse: Logarithmic Functions pp. M3-125A–M3-136
			4: Investigating Periodic Functions	1: Trigonometric Relationships	2: A Sense of Deja Vu: Periodic Functions pp. M4-21A–M4-36
					6: Farmer's Tan: The Tangent Function pp. M4-79A–M4-96
				2: Trigonometric Equations	2: Wascally Wabbits: Modeling with Periodic Functions pp. M4-125A–M4-136
					4: Springs Eternal: The Damping Function pp. M4-147A–M4-158

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M3.F.IF.A.1	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.*	MATHia Software	1: Analyzing Structure	2: Graphs of Functions	1: Identifying Key Characteristics of Graphs of Functions
				6: Characteristics of Polynomial Functions	2: Classifying Polynomial Functions
					3: Interpreting Key Features of Graphs in Terms of Quantities
					4: Identifying Key Characteristics of Polynomial Functions
M3.F.IF.A.2	Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.*	Textbook	1: Analyzing Structure	3: Characteristics of Polynomial Functions	5: Level Up: Analyzing Polynomial Functions pp. M1-277A-M1-288
		MATHia Software	1: Analyzing Structure	6: Characteristics of Polynomial Functions	7: Understanding Average Rate of Change of Polynomial Functions
M3.F.IF.B.3	Graph functions expressed symbolically and show key features of the graph, by hand and using technology.*	Textbook	3: Inverting Functions	4: Applications of Growth Modeling	2: Paint by Numbers: Art and Transformations pp. M3-267A–M3-276
M3.F.IF.B.3a	Graph linear and quadratic functions and show intercepts, maxima, and minima.	Textbook	1: Analyzing Structure	2: Composing and Decomposing Figures and Functions	5: Planting the Seeds: Exploring Cubic Functions pp. M1-159A-M1-172
					6: The Zero's the Hero: Decomposing Cubic Functions pp. M1-173A–M1-188
			3: Inverting Functions	4: Applications of Growth Modeling	2: Paint by Numbers: Art and Transformations pp. M3-267A–M3-276
M3.F.IF.B.3b	Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.	Textbook	3: Inverting Functions	1: Radical Functions	1: Strike That, Invert It: Inverses of Power Functions pp. M3-7A–M3-18
					2: Such a Rad Lesson: Radical Functions pp. M3-19A–M3-40
					3: Making Waves: Transformations of Radical Functions pp. M3-41A–M3-50
				4: Applications of Growth Modeling	2: Paint by Numbers: Art and Transformations pp. M3-267A–M3-276
		MATHia Software	3: Inverting Functions	1: Inverses of Functions	1: Investigating Inverses of Functions
					2: Graphing Square Root Functions

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M3.F.IF.B.3c	Graph polynomial functions, identifying zeros when suitable factorizations are available and showing end behavior.	Textbook	1: Analyzing Structure	2: Composing and Decomposing Figures and Functions	4: Folds, Turns, and Zeros: Transforming Function Shapes pp. M1-145A-M1-158
					5: Planting the Seeds: Exploring Cubic Functions pp. M1-159A-M1-172
					6: The Zero's the Hero: Decomposing Cubic Functions pp. M1-173A–M1-188
				3: Characteristics of Polynomial Functions	1: So Odd, I Can't Even: Power Functions pp. M1-203A-M1-216
					4: Function Construction: Building Cubic and Quartic Functions pp. M1-257A-M1-276
			3: Inverting Functions	4: Applications of Growth Modeling	2: Paint by Numbers: Art and Transformations pp. M3-267A–M3-276
M3.F.IF.B.3d	Graph exponential and logarithmic functions, showing intercepts and end behavior.	Textbook	3: Inverting Functions	2: Exponential and Logarithmic Functions	2: Pert and Nert: Properties of Exponential Graphs pp. M3-107A–M3-124
					3: Return of the Inverse: Logarithmic Functions pp. M3-125A–M3-136
				4: Applications of Growth Modeling	2: Paint by Numbers: Art and Transformations pp. M3-267A–M3-276
		MATHia Software	3: Inverting Functions	4: Exponential and Logarithmic Functions	1: Properties of Exponential Graphs
					2: Introduction to Logarithmic Functions
M3.F.IF.B.4	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	Textbook	1: Analyzing Structure	1: Exploring and Analyzing Patterns	3: Samesies: Comparing Multiple Representations of Functions pp. M1-31A–M1-50
				3: Characteristics of Polynomial Functions	6: To a Greater or Lesser Degree: Comparing Polynomial Functions pp. M1-289A-M1-304
				1: Exploring and Analyzing Patterns	4: True to Form: Forms of Quadratic Functions pp. M1-51A–M1-78
			3: Inverting Functions	1: Radical Functions	3: Making Waves: Transformations of Radical Functions pp. M3-41A–M3-50
				2: Exponential and Logarithmic Functions	2: Pert and Nert: Properties of Exponential Graphs pp. M3-107A–M3-124
		MATHia Software	1: Analyzing Structure	6: Characteristics of Polynomial Functions	8: Comparing Polynomial Functions in Different Forms

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M3.F.BF.A.1	Identify the effect on the graph of replacing f(x) by f(x) + k, kf(x), f(kx), and f(x + k) for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology.	Textbook	1: Analyzing Structure	2: Composing and Decomposing Figures and Functions	4: Folds, Turns, and Zeros: Transforming Function Shapes pp. M1-145A-M1-158
				3: Characteristics of Polynomial Functions	1: So Odd, I Can't Even: Power Functions pp. M1-203A-M1-216
					2: Math Class Needs a Makeover: Transformations of Polynomial Functions pp. M1-217A-M1-232
			2: Developing Structural Similarities	3: Rational Functions	2: Approaching Infinity: Transformations of Rational Functions pp. M2-145A–M2-166
			3: Inverting Functions	1: Radical Functions	3: Making Waves: Transformations of Radical Functions pp. M3-41A–M3-50
				2: Exponential and Logarithmic Functions	4: I Like to Move It: Transformations of Exponential and Logarithmic Functions pp. M3-137A–M3-158
			4: Investigating Periodic Functions	1: Trigonometric Relationships	5: The Sines They Are A-Changin': Transformations of Sine and Cosine Functions pp. M4-65A–M4-78
		MATHia Software	1: Analyzing Structure	2: Graphs of Functions	2: Transforming Functions
				3: Forms of Quadratic Functions	4: Quadratic Transformations
M3.F.BF.A.2	Find inverse functions.	MATHia Software	3: Inverting Functions	1: Inverses of Functions	3: Sketching Graphs of Inverses
M3.F.BF.A.2a	Find the inverse of a function when the given function is one-to-one.	Textbook	3: Inverting Functions	1: Radical Functions	2: Such a Rad Lesson: Radical Functions pp. M3-19A–M3-40
				2: Exponential and Logarithmic Functions	3: Return of the Inverse: Logarithmic Functions pp. M3-125A–M3-136
		MATHia Software	3: Inverting Functions	1: Inverses of Functions	4: Calculating Inverses of Linear Functions
M3.F.LE.A.1	Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.	Textbook	3: Investigating Growth and Decay	2: Using Exponential Equations	1: Downtown and Uptown: Exponential Equations for Growth and Decay pp. M3-67A–M3-76

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M3.F.LE.A.2	For exponential models, express as a logarithm the solution to ab^(ct) = d where a, c, and d are numbers and the base b is 2, 10, or e; evaluate the logarithm using technology.	Textbook	3: Inverting Functions	3: Exponential and Logarithmic Equations	3: More Than One Way to Crack an Egg: Solving Exponential Equations pp. M3-197A–M3-206
					4: Logging On: Solving Logarithmic Equations pp. M3-207A–M3-222
					5: What's the Use?: Applications of Exponential and Logarithmic Equations pp. M3-223A–M3-236
		MATHia Software	3: Inverting Functions	5: Solving Equations with Base 2, 10, or e	1: Solving Base 2 and Base 10 Equations
					2: Solving Base e Equations
					3: Solving Any Base Equations
M3.F.TF.A.1a	Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.	Textbook	4: Investigating Periodic Functions	1: Trigonometric Relationships	3: The Knights of the Round Table: Radian Measure pp. M4-37–M4-48
				2: Trigonometric Equations	1: Chasing Theta: Solving Trigonometric Equations pp. M4-111–M4-124
		MATHia Software	4: Investigating Periodic Functions	1: Graphs of Trigonometric Functions	1: Understanding the Unit CIrcle
M3.F.TF.A.1b	Use the unit circle to find sin (θ), cos(θ), and tan(θ) when θ is a commonly recognized angle between 0 and 2π.	Textbook	4: Investigating Periodic Functions	1: Trigonometric Relationships	3: What Goes Around: The Sine and Cosine Functions pp. M4-49–M4-64
					5: Farmer's Tan: The Tangent Function pp. M4-79A–M4-96
M3.F.TF.A.2	Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.	Textbook	4: Investigating Periodic Functions	1: Trigonometric Relationships	4: What Goes Around: The Sine and Cosine Functions pp. M4-49–M4-64
				2: Trigonometric Equations	1: Chasing Theta: Solving Trigonometric Equations pp. M4-105–M4-118
		MATHia Software	4: Investigating Periodic Functions	1: Graphs of Trigonometric Functions	1: Understanding the Unit CIrcle
M3.F.TF.B.3a	Given a point on a circle centered at the origin, recognize and use the right triangle ratio definitions of sin (θ), cos(θ), and tan(θ) to evaluate trigonometric functions.	Textbook	4: Investigating Periodic Functions	1: Trigonometric Relationships	3: What Goes Around: The Sine and Cosine Functions pp. M4-49–M4-64
					4: The Sines They Are A-Changin': Transformations of Sine and Cosine Functions pp. M4-65A–M4-78
					5: Farmer's Tan: The Tangent Function pp. M4-79A–M4-96

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M3.F.TF.B.3b	Given the quadrant of the angle, use the identity $\sin^2(\theta) + \cos^2(\theta) = 1$ to find sin (θ) given cos(θ), or vice versa.	MATHia Software	4: Investigating Periodic Functions	2: Pythagorean Identity	1: Proving the Pythagorean Identity 2: Using the Pythagorean Identity to Determine Sine, Cosine, or Tangent
M3.G.CO.A.1	Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.).	Textbook	5: Analyzing Geometric Functions	1: Constructions	1: Construction Ahead: Constructing a Square pp. M5-7A–M524 2: Copycats: Constructing a Regular Hexagon Inscribed in a Circle pp. M5-25–M5-32 3: A Regular Triangle: Constructing an Equilateral Triangle pp. M5-33–M5-40
M3.G.C.A.1	Recognize that all circles are similar.	Textbook	1: Reasoning With Shapes	1: Composing and Decomposing Shapes	1: Running Circles Around Geometry: Using Circles to Make Conjectures pp. M1-7A–M1-22
			2: Investigating Proportionality	3: Circles and Volume	1: All Circles Great and Small: Similarity Relationships in Circles pp. M2-211A–M2-228
M3.G.C.A.2	Identify and describe relationships among inscribed angles, radii, and chords.	Textbook	1: Reasoning With Shapes	1: Composing and Decomposing Shapes	1: Running Circles Around Geometry: Using Circles to Make Conjectures pp. M1-7A–M1-22
				2: Justifying Line and Angle Relationships	5: Corners in a Round Room: Angle Relationships Inside and Outside Circles pp. M1-165A–M1-194
				3: Using Congruence Theorems	3: Three-Chord Song: Relationships Between Chords pp. M1-249A–M1-263
M3.G.C.A.3	Construct the incenter and circumcenter of a triangle and use their properties to solve problems in context.	Textbook	1: Reasoning With Shapes	1: Composing and Decomposing Shapes	4: Tri Tri- Tri- and Separate Them: Conjectures About Triangles pp. M1-41A–M1-54 4: What's the Point?: Points of Concurrency pp. M1-55A–M1-72
M3.G.C.B.4	Know the formula and find the area of a sector of a circle in a real-world context.	Textbook	2: Investigating Proportionality	3: Circles and Volume	2: A Slice of Pi: Sectors and Segments of a Circle pp. M2-229A–M2-248
M3.G.GPE.A.1	Know and write the equation of a circle of given center and radius using the Pythagorean Theorem.	Textbook	4: Seeing Structure	3: Circles on a Coordinate Plane	1: X^2 Plus Y^2 Equals $Radius^2$: Deriving the Equation for a Circle pp. M4-187A–M4-200 2: A Blip on the Radar: Determining Points on a Circle pp. M4-201A–M4-216

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M3.G.GPE.B.2	Use coordinates to prove simple geometric theorems algebraically.	Textbook	4: Seeing Structure	3: Circles on a Coordinate Plane	2: A Blip on the Radar: Determining Points on a Circle pp. M4-201A–M4-216
M3.G.GPE.B.3	Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems.	Textbook	2: Exploring Constant Change	1: Linear Functions	3: Move It!: Transforming Linear Functions pp. M2-41A–M2-60
					4: Amirite?: Determining Slopes of Perpendicular Lines pp. M2-61A–M2-72
					5: Making a Connection: Comparing Linear Functions in Different Forms pp. M2-73A–M2-83
				4: Shapes on a Coordinate Plane	1: The Shape of Things: Classifying Shapes on the Coordinate Plane pp. M2-247A–M2-266
					2: Know It Inside Out: Area and Perimeter of Triangles and Rectangles on the Coordinate Plane pp. M2-267A–M2-286
M3.G.GPE.B.4	Find the point on a directed line segment between two given points that partitions the segment in a given ratio.	Textbook	2: Investigating Proportionality	1: Similarity	6: Jack's Spare Key: Partitioning Segments in Given Ratios pp. M2-95–M2-108
M3.G.GPE.B.5	Know and use coordinates to compute perimeters of polygons and areas of triangles and rectangles. *	Textbook	2: Exploring Constant Change	4: Shapes on a Coordinate Plane	2: Know It Inside Out: Area and Perimeter of Triangles and Rectangles on the Coordinate Plane pp. M2-267A–M2-286
					3: In All Shapes and Sizes: Area and Perimeter of Polygons on the Coordinate Plane pp. M2-287A–M2-300
M3.G.MG.A.1	Use geometric shapes, their measures, and their properties to describe objects.*	Textbook	1: Analyzing Structure	2: Composing and Decomposing Figures and Functions	2: Any Way You Slice It: Cross-Sections pp. M1-121A–M1-134
M3.G.MG.A.2	Apply geometric methods to solve real-world problems.*	Textbook	1: Analyzing Structure	2: Composing and Decomposing Figures and Functions	1: You Spin Me Round: Rotating Two-Dimensional Figures through Space pp. M1-105A–M1-120
			2: Developing Structural Similarities	3: Rational Functions	6: 16 Tons and What Do You Get?: Solving Work, Mixture, Distance, and Cost Problems pp. M2-223A–M2-238
			3: Inverting Functions	1: Radical Functions	2: Such a Rad Lesson: Radical Functions pp. M3-19A–M3-40

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M3.S.ID.A.1	Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages using the Empirical Rule.	Textbook	5: Relating Data and Decisions	1: Interpreting Data in Normal Distributions	1: Recharge It!: Normal Distributions pp. M5-7A–M5-18
					2: The Form of Norm: The Empirical Rule for Normal Distributions pp. M5-19A–M5-32
					3: Above, Below, and Between the Lines: Z-Scores and Percentiles pp. M5-33A–M5-44
		MATHia Software	5: Relating Data and Decisions	1: Normal Distributions	1: Applying the Empirical Rule for Normal Distributions
					2: Z-Scores and Percentiles
					3: Normal Distributions and Probability
M3.S.ID.B.2	Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.	Textbook	1: Searching for Patterns	3: Linear Regressions	3: The Residual Effect: Creating Residual Plots pp. M1-193A–M1-206
					4: To Fit or Not To Fit? That Is The Question!: Using Residual Plots pp. M1-207A–M1-218
M3.S.ID.B.2a	Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context.	Textbook	2: Developing Structural Similarities	2: Polynomial Models	3: Modeling Gig: Modeling with Polynomial Functions and Data pp. M2-103A–M2-117
			3: Inverting Functions	3: Exponential and Logarithmic Equations	5: What's the Use?: Applications of Exponential and Logarithmic Equations pp. M3-223A–M3-236
M3.S.ID.B.2b	Fit a linear function for a scatter plot that suggests a linear association.	Textbook	1: Searching for Patterns	3: Linear Regressions	1: Like a Glove: Least Square Regressions pp. M1-163A–M1-176
					2: Gotta Keep It Correlatin': Correlation pp. M1-133A–M1-191
					3: The Residual Effect: Creating Residual Plots pp. M1-193A–M1-206
					4: To Fit or Not To Fit? That Is The Question!: Using Residual Plots pp. M1-207A–M1-218
M3.S.IC.A.1	Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.	Textbook	5: Relating Data and Decisions	2: Making Inferences and Justifying Conclusions	1: Data, Data Everywhere: Sample Surveys, Observational Studies, and Experiments pp. M5-65A–M5-76
					2: Ample Sample Examples: Sampling Methods and Randomization pp. M5-77A–M5-94
					5: DIY: Designing a Study and Analyzing the Results pp. M5-127A–M5-134

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M3.S.IC.A.2	Use data from a sample survey to estimate a population mean or proportion; use a given margin or error to solve a problem in context.	Textbook	5: Relating Data and Decisions	2: Making Inferences and Justifying Conclusions	3: A Vote of Confidence: Using Confidence Intervals to Estimate Unknown Population Means pp. M5-95A–M5-110
					4: How Much Different?: Using Statistical Significance to Make Inferences About Populations pp. M5-111A–M5-126
					5: DIY: Designing a Study and Analyzing the Results pp. M5-127A–M5-134