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Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
N.CN.8 (+)	(+) Extend polynomial identities to the complex numbers.	Integrated Math III Textbook	2: Developing Structural Similarities	1: Relating Factors and Zeros	1: Satisfactory Factoring: Relating Factors and Zeros pp. M2-7–M2-22
					2: Divide and Conquer: Polynomial Division pp. M2-23–M2-42
N.CN.9 (+)	(+) Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.	Integrated Math III Textbook	1: Analyzing Structure	2: Composing and Decomposing Figures and Functions	6: The Zero's the Hero: Decomposing Cubic Functions pp. M1-173–M1-188
A.SSE.1	Interpret expressions that represent a quantity in terms of its context.*	MATHia Software	1: Analyzing Structure	1: Searching for Patterns	1: Exploring and Analyzing Patterns
				3: Forms of Quadratic Functions	2: Comparing Familiar Function Representations
A.SSE.1a	Interpret parts of an expression, such as terms, factors, and coefficients.*	Integrated Math III Textbook	1: Analyzing Structure	1: Exploring and Analyzing Patterns	4: True to Form: Forms of Quadratic Functions pp. M1-51–M1-78
			2: Developing Structural Similarities	1: Relating Factors and Zeros	2: Divide and Conquer: Polynomial Division pp. M2-23–M2-42
			3: Inverting Functions	4: Applications of Growth Modeling	1: Series Are Sums: Geometric Series pp. M3-249–M3-266
A.SSE.1b	Interpret complicated expressions by viewing one or more of their parts as a single entity.*	Integrated Math III Textbook	1: Analyzing Structure	1: Exploring and Analyzing Patterns	2: The Cat's Out of the Bag!: Generating Algebraic Expressions pp. M1-17–M1-30
				2: Composing and Decomposing Figures and Functions	3: Samesies: Comparing Multiple Representations of Functions pp. M1-31–M1-49
		MATHia Software	1: Analyzing Structure	2: Graphs of Functions	3: Blame It on the Rain: Modeling with Functions pp. M1-135–M1-144
A.SSE.2	Use the structure of an expression to identify ways to rewrite it.	Integrated Math III Textbook	1: Analyzing Structure	1: Exploring and Analyzing Patterns	4: True to Form: Forms of Quadratic Functions pp. M1-51–M1-78
			2: Developing Structural Similarities	1: Relating Factors and Zeros	1: Satisfactory Factoring: Relating Factors and Zeros pp. M2-7–M2-22

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A.SSE.2	Use the structure of an expression to identify ways to rewrite it.	Integrated Math III Textbook	2: Developing Structural Similarities	1: Relating Factors and Zeros	2: Divide and Conquer: Polynomial Division pp. M2-23–M2-42
				3: Rational Functions	4: Must Be a Rational Explanation: Operations with Rational Expressions pp. M2-183–M2-200
			4: Investigating Periodic Functions	2: Trigonometric Equations	5: Thunder. Thun- Thun- Thunder.: Solving Problems with Rational Equations pp. M2-201–M2-222
		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
A.SSE.4	Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. For example, calculate mortgage payments.*	Integrated Math III Textbook	3: Inverting Functions	4: Applications of Growth Modeling	1: Series Are Sums: Geometric Series pp. M3-249–M3-266
		MATHia Software	3: Inverting Functions	6: Finite Geometric Solutions	1: Introduction to Finite Geometric Series 2: Problem Solving Using Finite Geometric Series
A.APR.1	Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.	Integrated Math III Textbook	1: Analyzing Structure	1: Exploring and Analyzing Patterns	4: True to Form: Forms of Quadratic Functions pp. M1-51–M1-78
				2: Composing and Decomposing Figures and Functions	6: The Zero's the Hero: Decomposing Cubic Functions pp. M1-173–M1-188
		MATHia Software	2: Developing Structural Similarities	1: Relating Factors and Zeros	2: Divide and Conquer: Polynomial Division pp. M2-23–M2-42
				1: Analyzing Structure	5: Graphs of Polynomial Functions
2: Developing Structural Similarities	1: Polynomial Operations	2: Analyzing Polynomial Functions	1: Using a Factor Table to Multiply Polynomials 2: Multiplying Polynomials		
A.APR.2	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 $p(x)$.	Integrated Math III Textbook	2: Developing Structural Similarities	1: Relating Factors and Zeros	2: Divide and Conquer: Polynomial Division pp. M2-23–M2-42
		MATHia Software	2: Developing Structural Similarities	2: Solving Polynomials	2: Solving Polynomial Functions

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A.APR.3	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.	Integrated Math III Textbook	1: Analyzing Structure	2: Composing and Decomposing Figures and Functions	3: Blame It on the Rain: Modeling with Functions pp. M1-135–M1-144
					6: The Zero's the Hero: Decomposing Cubic Functions pp. M1-173–M1-188
			3: Characteristics of Polynomial Functions	3: Poly-Wog: Key Characteristics of Polynomial Functions pp. M1-233–M1-256	
		2: Developing Structural Similarities	1: Relating Factors and Zeros	4: Function Construction: Building Cubic and Quartic Functions pp. M1-257–M1-276	
		MATHia Software	1: Analyzing Structure	5: Graphs of Polynomial Functions	1: Satisfactory Factoring: Relating Factors and Zeros pp. M2-7–M2-22
				6: Identifying Zeros of Polynomials	7: Using Zeros to Sketch a Graph of Polynomial
A.APR.4	Prove polynomial identities and use them to describe numerical relationships. For example, the polynomial identity $(x^2 + y^2)^2 = (x^2 - y^2)^2 + (2xy)^2$ can be used to generate Pythagorean triples.	Integrated Math III Textbook	2: Developing Structural Similarities	2: Polynomial Models	1: Not a Case of Mistaken Identity: Exploring Polynomial Identities pp. M2-77–M2-89
A.APR.5 (+)	(+) Know and apply the Binomial Theorem for the expansion of $(x + y)^n$ in powers of x and y for a positive integer n , where x and y are any numbers, with coefficients determined for example by Pascal's Triangle. (The Binomial Theorem can be proved by mathematical induction or by a combinatorial argument.)	Integrated Math III Textbook	2: Developing Structural Similarities	2: Polynomial Models	2: Elegant Simplicity: Pascal's Triangle and the Binomial Theorem pp. M2-91–M2-102
		MATHia Software	2: Developing Structural Similarities	3: Polynomial Models	1: Pascal's Triangle

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A.APR.6	Rewrite simple rational expressions in different forms; write $a(x)/b(x)$ in the form $q(x) + r(x)/b(x)$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$, using inspection, long division, or, for the more complicated examples, a computer algebra system.	Integrated Math III Textbook	2: Developing Structural Similarities	3: Rational Functions	3: There's a Hole in My Function!: Graphical Discontinuities pp. M2-167–M2-182	
					4: Must Be a Rational Explanation: Operations with Rational Expressions pp. M2-183–M2-200	
		MATHia Software	2: Developing Structural Similarities	1: Polynomial Operations	4: Synthetic Division	
					5: Rational Expressions and Equations	1: Simplifying Rational Expressions
						2: Adding and Subtracting Rational Expressions 3: Multiplying and Dividing Rational Expressions
6: Rational Models	1: Modeling Rational Functions					
A.APR.7 (+)	(+) Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.	Integrated Math III Textbook	2: Developing Structural Similarities	3: Rational Functions	4: Must Be a Rational Explanation: Operations with Rational Expressions pp. M2-183–M2-200	
A.CED.1	Create equations and inequalities in one variable including ones with absolute value and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions. CA*	Integrated Math III Textbook	1: Analyzing Structure	1: Exploring and Analyzing Patterns	2: The Cat's Out of the Bag!: Generating Algebraic Expressions pp. M1-17–M1-30	
					3: Samesies: Comparing Multiple Representations of Functions pp. M1-31–M1-49	
			2: Developing Structural Similarities	3: Rational Functions	4: True to Form: Forms of Quadratic Functions pp. M1-51–M1-78	
					4: Unequal Equals: Solving Polynomial Inequalities pp. M2-51–M2-64	
		MATHia Software	2: Developing Structural Similarities	3: Polynomial Models	6: Rational Models	5: Thunder. Thun- Thun- Thunder.: Solving Problems with Rational Equations pp. M2-201–M2-222
						6: 16 Tons and What Do You Get?: Solving Work, Mixture, Distance, and Cost Problems pp. M2-223–M2-238
				6: Rational Models	4: Solving Polynomial Inequalities	
					2: Using Rational Models 3: Solving Work, Mixture, and Distance Problems 4: Modeling and Solving with Rational Functions	

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
A.CED.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.*	Integrated Math III Textbook	1: Analyzing Structure	1: Exploring and Analyzing Patterns	4: True to Form: Forms of Quadratic Functions pp. M1-51–M1-78
A.CED.3	Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.*	Integrated Math III Textbook	1: Analyzing Structure	3: Characteristics of Polynomial Functions	5: Level Up: Analyzing Polynomial Functions pp. M1-277–M1-288
			2: Developing Structural Similarities	1: Relating Factors and Zeros	4: Unequal Equals: Solving Polynomial Inequalities pp. M2-51–M2-64
				2: Polynomial Models	3: Modeling Gig: Modeling with Polynomial Functions and Data pp. M2-103–M2-117
A.CED.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.	Integrated Math III Textbook	3: Inverting Functions	1: Radical Functions	5: Into the Unknown: Solving Radical Equations pp. M3-71–M3-80
A.REI.2	Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.	Integrated Math III Textbook	2: Developing Structural Similarities	3: Rational Functions	5: Thunder. Thun- Thun- Thunder.: Solving Problems with Rational Equations pp. M2-201–M2-222
					6: 16 Tons and What Do You Get?: Solving Work, Mixture, Distance, and Cost Problems pp. M2-223–M2-238
			3: Inverting Functions	1: Radical Functions	5: Into the Unknown: Solving Radical Equations pp. M3-71–M3-80
		MATHia Software	2: Developing Structural Similarities	4: Rational Functions	2: Modeling Ratios as Rational Functions
5: Rational Expressions and Equations	4: Solving Rational Equations that Result in Linear Equations				

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A.REI.11	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 solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.*	Integrated Math III Textbook	1: Analyzing Structure	2: Composing and Decomposing Figures and Functions	3: Blame It on the Rain: Modeling with Functions pp. M1-135–M1-144
				3: Characteristics of Polynomial Functions	5: Level Up: Analyzing Polynomial Functions pp. M1-277–M1-288
			2: Developing Structural Similarities	3: Rational Functions	5: Thunder. Thun- Thun- Thunder.: Solving Problems with Rational Equations pp. M2-201–M2-222
				3: Inverting Functions	2: Exponential and Logarithmic Functions
			3: Exponential and Logarithmic Equations		2: Pert and Nert: Properties of Exponential Graphs pp. M3-107–M3-124
			3: More Than One Way to Crack an Egg: Solving Exponential Equations pp. M3-197–M3-206		
F.IF.4	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. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.*	Integrated Math III Textbook	1: Analyzing Structure	1: Exploring and Analyzing Patterns	2: The Cat's Out of the Bag!: Generating Algebraic Expressions pp. M1-17–M1-30
				4: True to Form: Forms of Quadratic Functions pp. M1-51–M1-78	
				2: Composing and Decomposing Figures and Functions	5: Planting the Seeds: Exploring Cubic Functions pp. M1-159–M1-172
				3: Characteristics of Polynomial Functions	3: Poly-Wog: Key Characteristics of Polynomial Functions pp. M1-233–M1-256
			5: Level Up: Analyzing Polynomial Functions pp. M1-277–M1-288		
			2: Developing Structural Similarities	2: Polynomial Models	3: Modeling Gig: Modeling with Polynomial Functions and Data pp. M2-103–M2-117
			3: Inverting Functions	1: Radical Functions	1: Strike That, Invert It: Inverses of Power Functions pp. M3-7–M3-18
					2: Such a Rad Lesson: Radical Functions pp. M3-19–M3-40

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
F.IF.4	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. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.*	Integrated Math III Textbook	3: Inverting Functions	2: Exponential and Logarithmic Functions	1: Half-Life: Comparing Linear and Exponential Functions pp. M3-93–M3-106
					2: Pert and Nert: Properties of Exponential Graphs pp. M3-107–M3-124
					3: Return of the Inverse: Logarithmic Functions pp. M3-125–M3-136
			4: Investigating Periodic Functions	1: Trigonometric Relationships	2: A Sense of Deja Vu: Periodic Functions pp. M4-21–M4-36
		6: Farmer's Tan: The Tangent Function pp. M4-79–M4-96			
		2: Trigonometric Equations	2: Trigonometric Equations	2: Wascally Wabbits: Modeling with Periodic Functions pp. M4-125–M4-136	
				4: Springs Eternal: The Damping Function pp. M4-147–M4-158	
		MATHia Software	1: Analyzing Structure	2: Graphs of Functions	1: Identifying Key Characteristics of Graphs of Functions
5: Graphs of Polynomial Functions	3: Classifying Polynomial Functions				
	4: Interpreting Key Features of Graphs in Terms of Quantities				
F.IF.5	Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.*	Integrated Math III Textbook	1: Analyzing Structure	2: Composing and Decomposing Figures and Functions	5: Planting the Seeds: Exploring Cubic Functions pp. M1-159–M1-172
			2: Developing Structural Similarities	2: Polynomial Models	3: Modeling Gig: Modeling with Polynomial Functions and Data pp. M2-103–M2-117
				3: Rational Functions	5: Thunder. Thun- Thun- Thunder.: Solving Problems with Rational Equations pp. M2-201–M2-222
		3: Inverting Functions	1: Radical Functions	2: Such a Rad Lesson: Radical Functions pp. M3-19–M3-40	

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F.IF.5	Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.*	Integrated Math III Textbook	3: Inverting Functions	1: Radical Functions	3: Making Waves: Transformations of Radical Functions pp. M3-41–M3-50
		MATHia Software	1: Analyzing Structure	2: Exponential and Logarithmic Functions	3: Return of the Inverse: Logarithmic Functions pp. M3-125–M3-136
				5: Graphs of Polynomial Functions	1: Modeling Polynomial Functions
F.IF.6	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.*	Integrated Math III Textbook	1: Analyzing Structure	3: Characteristics of Polynomial Functions	5: Level Up: Analyzing Polynomial Functions pp. M1-277–M1-288
		MATHia Software	1: Analyzing Structure	5: Graphs of Polynomial Functions	8: Understanding Average Rate of Change of Polynomial Functions
F.IF.7	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.*	Integrated Math III Textbook	3: Inverting Functions	4: Applications of Growth Modeling	2: Paint By Numbers: Art and Transformations pp. M3-267–M3-276
F.IF.7b	Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.*	Integrated Math III Textbook	3: Inverting Functions	1: Radical Functions	1: Strike That, Invert It: Inverses of Power Functions pp. M3-7–M3-18
					2: Such a Rad Lesson: Radical Functions pp. M3-19–M3-40
					3: Making Waves: Transformations of Radical Functions pp. M3-41–M3-50
		MATHia Software	3: Inverting Functions	4: Applications of Growth Modeling	2: Paint By Numbers: Art and Transformations pp. M3-267–M3-276
F.IF.7c	Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.*	Integrated Math III Textbook	1: Analyzing Structure	2: Composing and Decomposing Figures and Functions	1: Investigating Inverses of Functions
					2: Graphing Square Root Functions
					4: Folds, Turns, and Zeros: Transforming Function Shapes pp. M1-145–M1-158
					5: Planting the Seeds: Exploring Cubic Functions pp. M1-159–M1-172

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)		
F.IF.7c	Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.*	Integrated Math III Textbook	1: Analyzing Structure	2: Composing and Decomposing Figures and Functions	6: The Zero's the Hero: Decomposing Cubic Functions pp. M1-173–M1-188		
				3: Characteristics of Polynomial Functions	1: So Odd, I Can't Even: Power Functions pp. M1-203–M1-216 4: Function Construction: Building Cubic and Quartic Functions pp. M1-257–M1-276		
			3: Inverting Functions	4: Applications of Growth Modeling	2: Paint By Numbers: Art and Transformations pp. M3-267–M3-276		
F.IF.7e	Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.*	Integrated Math III Textbook	3: Inverting Functions	2: Exponential and Logarithmic Functions	2: Pert and Nert: Properties of Exponential Graphs pp. M3-107–M3-124 3: Return of the Inverse: Logarithmic Functions pp. M3-125–M3-136		
				4: Applications of Growth Modeling	2: Paint By Numbers: Art and Transformations pp. M3-267–M3-276		
			4: Investigating Periodic Functions	1: Trigonometric Relationships	2: A Sense of Deja Vu: Periodic Functions pp. M4-21–M4-36 4: What Goes Around: The Sine and Cosine Functions pp. M4-49–M4-64 6: Farmer's Tan: The Tangent Function pp. M4-79–M4-96		
					MATHia Software	3: Inverting Functions	4: Exponential and Logarithmic Functions
		F.IF.8	Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.	Integrated Math III Textbook			1: Analyzing Structure
					3: Inverting Functions	2: Exponential and Logarithmic Functions	

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F.IF.9	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	Integrated Math III Textbook	1: Analyzing Structure	1: Exploring and Analyzing Patterns	3: Samesies: Comparing Multiple Representations of Functions pp. M1-31–M1-49 4: True to Form: Forms of Quadratic Functions pp. M1-51–M1-78
				3: Characteristics of Polynomial Functions	6: To a Greater or Lesser Degree: Comparing Polynomial Functions pp. M1-289–M1-304
			3: Inverting Functions	1: Radical Functions	3: Making Waves: Transformations of Radical Functions pp. M3-41–M3-50
				2: Exponential and Logarithmic Functions	2: Pert and Nert: Properties of Exponential Graphs pp. M3-107–M3-124
		MATHia Software	1: Analyzing Structure	5: Graphs of Polynomial Functions	9: Comparing Polynomial Functions in Different Forms
F.BF.1	Write a function that describes a relationship between two quantities.*	Integrated Math III Textbook	2: Developing Structural Similarities	2: Polynomial Models	3: Modeling Gig: Modeling with Polynomial Functions and Data pp. M2-103–M2-117
			3: Inverting Functions	4: Applications of Growth Modeling	3: This Is the Title of This Lesson: Fractals pp. M3-277–M3-293
F.BF.1b	Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.*	Integrated Math III Textbook	1: Analyzing Structure	2: Composing and Decomposing Figures and Functions	3: Blame It on the Rain: Modeling with Functions pp. M1-135–M1-144
				3: Characteristics of Polynomial Functions	4: Function Construction: Building Cubic and Quartic Functions pp. M1-257–M1-276
		MATHia Software	4: Investigating Periodic Functions	2: Trigonometric Equations	4: Springs Eternal: The Damping Function pp. M4-147–M4-158
		MATHia Software	1: Analyzing Structure	5: Graphs of Polynomial Functions	2: Analyzing Polynomial Functions

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F.BF.3	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. Include recognizing even and odd functions from their graphs and algebraic expressions for them.	Integrated Math III Textbook	1: Analyzing Structure	2: Composing and Decomposing Figures and Functions	4: Folds, Turns, and Zeros: Transforming Function Shapes pp. M1-145–M1-158		
				3: Characteristics of Polynomial Functions	1: So Odd, I Can't Even: Power Functions pp. M1-203–M1-216		
			2: Developing Structural Similarities	3: Rational Functions	2: Approaching Infinity: Transformations of Rational Functions pp. M2-145–M2-166		
			3: Inverting Functions	1: Radical Functions	3: Making Waves: Transformations of Radical Functions pp. M3-41–M3-50		
				2: Exponential and Logarithmic Functions	4: I Like to Move It: Transformations of Exponential and Logarithmic Functions pp. M3-137–M3-158		
		4: Investigating Periodic Functions	1: Trigonometric Relationships	5: The Sines They Are A-Changin': Transformations of Sine and Cosine Functions pp. M4-65–M4-78			
		MATHia Software	1: Analyzing Structure	2: Graphs of Functions	2: Transforming Functions		
				3: Forms of Quadratic Functions	4: Quadratic Transformations		
		F.BF.4	Find inverse functions.	Integrated Math III Textbook	3: Inverting Functions	2: Exponential and Logarithmic Functions	3: Return of the Inverse: Logarithmic Functions pp. M3-125–M3-136
				MATHia Software	3: Inverting Functions	1: Inverses of Functions	3: Sketching Graphs of Inverses
F.BF.4a	Solve an equation of the form $f(x) = c$ for a simple function f that has an inverse and write an expression for the inverse. For example, $f(x) = (x + 1)/(x - 1)$ for $x \neq 1$.	Integrated Math III Textbook	3: Inverting Functions	1: Radical Functions	2: Such a Rad Lesson: Radical Functions pp. M3-19–M3-40		
				2: Exponential and Logarithmic Functions	3: Return of the Inverse: Logarithmic Functions pp. M3-125–M3-136		
		MATHia Software	3: Inverting Functions	1: Inverses of Functions	4: Calculating Inverses of Linear Functions		

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
F.LE.4	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.* [Logarithms as solutions for exponentials]	Integrated Math III Textbook	3: Inverting Functions	3: Exponential and Logarithmic Equations	3: More Than One Way to Crack an Egg: Solving Exponential Equations pp. M3-197–M3-206
					4: Logging On: Solving Logarithmic Equations pp. M3-207–M3-222
		MATHia Software	3: Inverting Functions	5: Solve Equations with Base 2, 10, or e	5: What's the Use?: Applications of Exponential and Logarithmic Equations pp. M3-223–M3-236
					1: Solving Base 2 and Base 10 Equations
F.LE.4.1	Prove simple laws of logarithms. CA*	Integrated Math III Textbook	3: Inverting Functions	3: Exponential and Logarithmic Equations	2: Mad Props: Proportions of Logarithms pp. M3-185–M3-196
F.LE.4.2	Use the definition of logarithms to translate between logarithms in any base. CA*	Integrated Math III Textbook	3: Inverting Functions	3: Exponential and Logarithmic Equations	3: More Than One Way to Crack an Egg: Solving Exponential Equations pp. M3-197–M3-206
F.LE.4.3	Understand and use the properties of logarithms to simplify logarithmic numeric expressions and to identify their approximate values. CA*	Integrated Math III Textbook	3: Inverting Functions	3: Exponential and Logarithmic Equations	1: All the Pieces of the Puzzle: Logarithmic Expressions pp. M3-171–M3-184
F.TF.1	Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.	Integrated Math III Textbook	4: Investigating Periodic Functions	1: Trigonometric Relationships	3: The Knights of the Round Table: Radian Measure pp. M4-37–M4-48
		MATHia Software	4: Investigating Periodic Functions	2: Trigonometric Equations	1: Chasing Theta: Solving Trigonometric Equations pp. M4-111–M4-123
F.TF.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.	Integrated Math III Textbook	4: Investigating Periodic Functions	1: Trigonometric Relationships	4: What Goes Around: The Sine and Cosine Functions pp. M4-49–M4-64
		MATHia Software	4: Investigating Periodic Functions	2: Trigonometric Equations	1: Chasing Theta: Solving Trigonometric Equations pp. M4-111–M4-123
		MATHia Software	4: Investigating Periodic Functions	1: Graphs of Trigonometric Functions	1: Understanding the Unit Circle
F.TF.2.1	Graph all 6 basic trigonometric functions.*	Integrated Math III Textbook	4: Investigating Periodic Functions	1: Trigonometric Relationships	4: What Goes Around: The Sine and Cosine Functions pp. M4-49–M4-64
					6: Farmer's Tan: The Tangent Function pp. M4-79–M4-96

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
F.TF.5	Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.*	Integrated Math III Textbook	4: Investigating Periodic Functions	1: Trigonometric Relationships	5: The Sines They Are A-Changin': Transformations of Sine and Cosine Functions pp. M4-65–M4-78
				2: Trigonometric Equations	2: Wascally Wabbits: Modeling with Periodic Functions pp. M4-125–M4-136
					3: The Wheel Deal: Modeling Motion with a Trigonometric Function pp. M4-137–M4-146
		MATHia Software	4: Investigating Periodic Functions	1: Graphs of Trigonometric Functions	4: Springs Eternal: The Damping Function pp. M4-147–M4-158
G.SRT.9	(+) Derive the formula $A = 1/2 ab \sin(C)$ for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side.	Integrated Math III Textbook	4: Investigating Periodic Functions	1: Trigonometric Relationships	1: The Deriving Force: Deriving the Triangle Area Formula, the Law of Sines, and the Law of Cosines pp. M4-7–M4-20
G.SRT.10	(+) Prove the Laws of Sines and Cosines and use them to solve problems.	Integrated Math III Textbook	4: Investigating Periodic Functions	1: Trigonometric Relationships	1: The Deriving Force: Deriving the Triangle Area Formula, the Law of Sines, and the Law of Cosines pp. M4-7–M4-20
G.SRT.11	(+) Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces).	Integrated Math III Textbook	4: Investigating Periodic Functions	1: Trigonometric Relationships	1: The Deriving Force: Deriving the Triangle Area Formula, the Law of Sines, and the Law of Cosines pp. M4-7–M4-20
G.GPE.3.1	Given a quadratic equation of the form $ax^2 + by^2 + cx + dy + e = 0$, use the method for completing the square to put the equation into standard form; identify whether the graph of the equation is a circle, ellipse, parabola, or hyperbola and graph the equation. [In Mathematics III, this standard addresses only circles and parabolas.] CA	Integrated Math II Textbook	Module 2 M4: Seeing Structure	3: Circles on the Coordinate Plane	1: X^2 Plus Y^2 Equals Radius ² : Deriving the Equation for a Circle pp. M4-187–M4-200
					4: Going the Equidistance: Equation of a Parabola pp. M4-227–M4-254
G.GMD.4	Identify the shapes of two-dimensional cross-sections of three dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.	Integrated Math III Textbook	1: Analyzing Structure	2: Composing and Decomposing Figures and Functions	1: You Spin Me Round: Rotating Two-Dimensional Figures through Space pp. M1-105–M1-120
					2: Any Way You Slice It: Cross Sections pp. M1-121–M1-134

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
G.MG.1	Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).*	Integrated Math III Textbook	1: Analyzing Structure	2: Composing and Decomposing Figures and Functions	2: Any Way You Slice It: Cross Sections pp. M1-121–M1-134
G.MG.2	Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).*	Integrated Math III Textbook	2: Developing Structural Similarities	3: Rational Functions	6: 16 Tons and What Do You Get?: Solving Work, Mixture, Distance, and Cost Problems pp. M2-223–M2-238
			3: Inverting Functions	1: Radical Functions	2: Such a Rad Lesson: Radical Functions pp. M3-19–M3-40
G.MG.3	Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).*	Integrated Math III Textbook	1: Analyzing Structure	2: Composing and Decomposing Figures and Functions	1: You Spin Me Round: Rotating Two-Dimensional Figures through Space pp. M1-105–M1-120
			3: Inverting Functions	1: Radical Functions	2: Such a Rad Lesson: Radical Functions pp. M3-19–M3-40
S.ID.4	Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve.*	Integrated Math III Textbook	5: Relating Data and Decisions	1: Interpreting Data in Normal Distributions	1: Recharge It!: Normal Distributions pp. M5-7–M5-18
					2: The Form of Norm: The Empirical Rule for Normal Distributions pp. M5-19–M5-32
					3: Above, Below, and Between the Lines: Z-Scores and Percentiles pp. M5-33–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

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
S.IC.1	Understand statistics as a process for making inferences about population parameters based on a random sample from that population.*	Integrated Math III Textbook	5: Relating Data and Decisions	2: Making Inferences and Justifying Conclusions	1: Data, Data Everywhere: Sample Surveys, Observational Studies, and Experiments pp. M5-65–M5-75
					2: Ample Sample Examples: Sampling Methods and Randomization pp. M5-77–M5-94
					3: A Vote of Confidence: Using Confidence Intervals to Estimate Unknown Population Means pp. M5-95–M5-110
					4: How Much Different?: Using Statistical Significance to Make Inferences About Populations pp. M5-111–M5-126
					5: DIY: Designing a Study and Analyzing the Results pp. M5-127–M5-134
S.IC.2	Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model?*	Integrated Math III Textbook	5: Relating Data and Decisions	2: Making Inferences and Justifying Conclusions	4: How Much Different?: Using Statistical Significance to Make Inferences About Populations pp. M5-111–M5-126
					5: DIY: Designing a Study and Analyzing the Results pp. M5-127–M5-134
S.IC.3	Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.*	Integrated Math III Textbook	5: Relating Data and Decisions	2: Making Inferences and Justifying Conclusions	1: Data, Data Everywhere: Sample Surveys, Observational Studies, and Experiments pp. M5-65–M5-75
					2: Ample Sample Examples: Sampling Methods and Randomization pp. M5-77–M5-94
					5: DIY: Designing a Study and Analyzing the Results pp. M5-127–M5-134
S.IC.4	Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling.*	Integrated Math III 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. M5-95–M5-110

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
S.IC.4	Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling.*	Integrated Math III Textbook	5: Relating Data and Decisions	2: Making Inferences and Justifying Conclusions	4: How Much Different?: Using Statistical Significance to Make Inferences About Populations pp. M5-111–M5-126
					5: DIY: Designing a Study and Analyzing the Results pp. M5-127–M5-134
S.IC.5	Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.*	Integrated Math III Textbook	5: Relating Data and Decisions	2: Making Inferences and Justifying Conclusions	4: How Much Different?: Using Statistical Significance to Make Inferences About Populations pp. M5-111–M5-126
					5: DIY: Designing a Study and Analyzing the Results pp. M5-127–M5-134
S.IC.6	Evaluate reports based on data.*	Integrated Math III 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. M5-95–M5-110
					4: How Much Different?: Using Statistical Significance to Make Inferences About Populations pp. M5-111–M5-126
					5: DIY: Designing a Study and Analyzing the Results pp. M5-127–M5-134
S.MD.6 (+)	(+) Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).*	Integrated Math III Textbook	5: Relating Data and Decisions	1: Interpreting Data in Normal Distributions	4: Toh-May-Toh, Toh-Mah-Toh: Normal Distributions and Probability pp. M5-45–M5-52
S.MD.7 (+)	(+) Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).*	Integrated Math III Textbook	5: Relating Data and Decisions	1: Interpreting Data in Normal Distributions	4: Toh-May-Toh, Toh-Mah-Toh: Normal Distributions and Probability pp. M5-45–M5-52