Pre-Calculus

1st Semester Learning Targets

	GP Learning Target	Topic	Description	Text Lippman
Unit 1: Intro. to Functions and Graphs	1A	Identifying Functions	I can identify functions from data tables, graphs, and descriptions of set relations.	1.1
	1B	*Domain, Range, and Number Sets*	I can describe a set of numbers in a variety of ways.	1.2
	1C	Piecewise-Defined Functions	I can define, interpret, and use piecewise functions in function notation and as a graph.	1.2
	1D	Rates of Change and Behavior of Graphs	I can determine the average rate of change for a function as well as identify increasing and decreasing functions and intervals.	1.3
Unit 2: Basic Polynomial Functions	2A	Combining and Modeling with Transformations	I can use multiple transformations to determine the graph from an equation or vice versa for linear and quadratic functions.	1.5
	2B	Linear and Quadratic Regression and models	I can identify linear and quadratic correlations in data and use technology to define an appropriate linear or quadratic regression function.	2.3/2.4
	2C	Power Functions with models	I can represent and apply power functions, with integer and rational powers, as equations and graphs.	3.1
	2D	Completing the Square and the Vertex Formula	I can identify key features of a parabola from its vertex form equation, and by converting a quadratic function from standard form to vertex form.	3.2
Unit 3: Nonlinear Functions and Equations	3A	Quadratic Equations with Complex Solutions	I can solve quadratic equations by factoring, quadratic formula, and completing the square.	N/A
	3B	Graphing Polynomial Functions and modeling	I can identify the extrema, symmetry, and zeros of polynomial functions and use them to graph and model with these functions.	3.3
	3C	Polynomial Equations And the Fundamental Theorem of Algebra	I can describe and apply the Fundamental Theorem of Algebra to find real and complex solutions of polynomial equations	3.4-3.6*
	3D	Rational Functions and Asymptotes	I can graph rational functions and identify their asymptotes.	3.7*
			*These lesson numbers are from the modified book	
Unit 4: Exponentials, Logistics, and Logarithms	4A	Solving problems with Exponential	I can solve problems involving exponential functions.	4.1
	4B	Graphing Exponential	I can graph and describe transformations for exponential functions.	4.2
	4C	Solving problems with Logarithmic Functions	I can solve problems involving logarithmic functions.	4.3/4.4
	4D	Graphing Logarithmic Functions	I can graph and describe transformations for logarithmic functions.	4.5
Unit 5: Systems of Equations and Inequalities	5A	Systems of Equations in Two Variables	I can solve and apply systems of linear and nonlinear equations in two variables.	N/A
	5B	Systems of Linear Equations in Three Variables	I can solve and apply systems of linear equations in three variables using substitution, elimination, and matrices	N/A
	5C	Systems of Non-Linear Inequalities in Two Variables	I can solve and apply systems of nonlinear inequalities in two variables.	N/A
Unit 6: Conic Sections	6A	Conic Sections	I can write the equation for and graph circles, ellipses, and hyperbolas.	N/A

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2nd Semester Learning Targets

	GP Learning Target	Topic	Description	Text Lippman
Unit 7: Trigonometric Functions	7A	Angles and Radian Measure	I can accurately use radian measures to define angles and find arc lengths.	5.2
	7B	The Unit Circle and the Circular Functions	I can find the values of the Sine and Cosine on the 16 point Unit circle and apply them to solve problems involving all 6 trigonometric functions.	5.3/5.4
	7C	Trigonometry Functions and Angles	In can solve problems by applying the 6 trigonometric functions to the sides of a right triangle.	5.5
	7D	Law of Sines and Cosines	I can solve problems using the Law of Sines and the Law of Cosines.	8.1
Unit 8: Graphs of Trigonometric Functions	8A	Graphs of Sinusoids	I can create and use graphs of transformations of sine and cosine functions to solve problems.	6.1
	8B	Graphs of the other Trigonometric Functions	I can create and use the graphs of transformations of non-sinusoid trig. functions (csc, sec, tan, cot) to solve problems	6.2
	8C	Graphing Inverse Trigonometric Functions.	I can create and use graphs of transformations of inverse trigonometric functions to solve problems.	6.3
	8D	Composite Graphs of Trigonometric Functions	I can create and use graphs of transformations of composite trigonometric functions to solve problems.	7.4
Unit 9: Analytic Trigonometry	9A	Fundamental Trigonometric Identities	I can use and apply fundamental trigonometric identities.	7.1
	9B	Proving Trigonometric Identities	I can prove trigonometric identities.	7.2
	9C	Angle Sum and Difference identities	I can use and apply sum and difference identities.	7.2
	9D	Multiple Angle Identities	I can use and apply multiple angle identities.	7.3
Unit 10: Vector, Parametric, and Polar Graphs	10A	Vectors in the Plane	I can represent, model with, and perform operations on vector quantities.	8.4
	10B	Dot Products of Vectors	I can apply the dot product of vectors to solve problems.	N/A
	10C	Parametric Equations and Motion	I can create, interpret, and apply parametric equations.	8.5
	10D	Polar Coordinates and Graphs	I can locate points, create graphs, and analyze graphs in the polar coordinate system.	8.2

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