


Mohawk Local School District

Pre-Calculus; Quarter 1-4

Curriculum Map & Pacing Guide

Topic/Lessons	Current-Standard/Indicator	Future-Standard/Indicator	Activities to Support	Assessment	
Sections 1-2 (Analyzing Graphs of Functions and Relations), 1-4 (Extrema and Average Rates of Change), 2-2 (Polynomial Functions)	Identify the maximum and minimum points of polynomial, rational and trigonometric functions graphically and with technology.	11-D-4			
Sections 2-2 (Polynomial Functions), 2-4 (Zeros of Polynomial Functions)	Describe and compare the characteristics of transcendental and periodic functions; e.g., general shape, number of roots, domain and range, asymptotic behavior, extrema, local and global behavior.	12-D-3			
Section 1-2 (Analyzing Graphs of Functions and Relations)	Identify families of functions with graphs that have rotation symmetry or reflection symmetry about the y -axis, x -axis or $y = x$.	11-D-5			
Section 2-1 (Power and Radical Functions)	Solve equations involving radical expressions and complex roots.	11-D-8			

Section 1-2 (Analyzing Graphs of Functions and Relations), 1-7 (Inverse Relations and Functions)	Represent the inverse of a function symbolically and graphically as a reflection about $y = x$.	11-D-6			
Chapter 1 throughout (Functions From a Calculus Perspective)	Describe and compare the characteristics of the following families of functions: quadratics with complex roots, polynomials of any degree, logarithms, and rational functions; e.g., general shape, number of roots, domain and range, asymptotic behavior.	11-D-3			
Quarter 2					
Section 3-1 (Exponential Functions), 3-2 (Logarithmic Functions)	Represent the inverse of a transcendental function symbolically.	12-D-4			
Section 4-3 (Trigonometric Functions on the Unit Circle), 4-5 Graphing Other Trig Functions), 4-7 (The Law of Sines and the Law of Cosines), 5-4 (Sum and Difference Identities)	Derive and apply the basic trigonometric identities; i.e., angle addition, angle subtraction and double angle.	12-C-2			
Section 4-2 (Degrees and Radians)	Use radian and degree angle measures to solve problems and perform conversions as needed.	11-B-2			

Section 4-7 (The Law of Sines and Cosines)	Use trigonometric relationships to determine lengths and angle measures; i.e., Law of Sines and Law of Cosines.	11-C-4			
Section 4-1 (Right Triangle Trig), 4-2 (Degrees and Radians)	Use trigonometric relationships to determine lengths and angle measures; i.e., Law of Sines and Law of Cosines.	12-B-2			
Chapter 5 (Trig Identities and Equations)	Derive and apply the basic trigonometric identities; i.e., angle addition, angle subtraction and double angle.	12-C-2			
Quarter 3					
Sections 6-1 (Multivariable Linear Systems and Row Operations), 6-2 (Matrix Multiplication, Inverses, and Determinants), 6-3 (Solving Linear Systems), 8-1 Intro to Vectors), 8-2 (Vectors in the Coordinate Plane)	Model and solve problems with matrices and vectors.	11-D-7			
Section 9-3 (Polar and Rectangular Forms of Equations)	Translate freely between polar and Cartesian coordinate systems.	12-D-9			
Section 8-1 (Intro to Vectors)	Determine what properties hold for vector addition and multiplication, and for scalar multiplication.	11-A-2			
Section 8-2 (Vectors in the Coordinate Plane)	Model, using the coordinate plane, vector addition and scalar multiplication.	11-A-5			

Section 8-1 (Intro to Vectors), 8-2 (Vectors in the Coordinate Plane)	Use vector addition and scalar multiplication to solve problems.	11-A-9	Supplemental Worksheet		
Section 9-2 (Graphs of Polar Equations), 9-3 (Polar and Rectangular Forms of Equations)	Use polar coordinates to specify locations on a plane.	11-C-1			
Section 8-2 (Vectors in the Coordinate Plane)	Represent translations using vectors.	11-C-2			
Section 8-1 (Introduction to Vectors)	Describe multiplication of a vector and a scalar graphically and algebraically, and apply to problem situations.	11-C-3	Supplemental Worksheet		
Section 6-1 (Linear Systems and Row Operations), 6-2 (Matrix Multiplication, Inverses and Determinants)	Set up and solve systems of equations using matrices and graphs, with and without technology.	12-D-5	Use TI-84 generated smart board application.		
Quarter 4					
Section 10-5 (The Binomial Theorem)	Apply combinations as a method to create coefficients for the Binomial Theorem, and make connections to everyday and workplace problem situations.	12-A-2			
Section 12-5 (The Area Under a Curve and Integration)	Apply informal concepts of successive approximation, upper and lower bounds, and limits in measurement situations; e.g., measurement of some quantities, such as volume of a cone, can be determined by sequences of increasingly accurate approximations.	12-B-3			

<p>Section 10-1 (Sequence, Series and Sigma Notation), 10-2 (Arithmetic Sequences and Series), 10-3 (Geometric Sequences and Series), 10-6 (Functions as Infinite Series)</p>	<p>Analyze the behavior of arithmetic and geometric sequences and series as the number of terms increases.</p>	<p>12-D-1</p>			
<p>Section 10-1 (Sequence, Series, and Sigma Notation), 10-2 (Arithmetic Sequence and Series), 10-3 (Geometric Sequence and Series)</p>	<p>Translate between the numeric and symbolic form of a sequence or series.</p>	<p>12-D-2</p>			
<p>Section 12-5 (Area Under a Curve and Integration), 12-6 (The Fundamental Theorem of Calculus)</p>	<p>Compare estimates of the area under a curve over a bounded interval by partitioning the region with rectangles; e.g., make successive estimates using progressively smaller rectangles.</p>	<p>12-D-8</p>			
<p>Section 11-1 (Descriptive Statistics)</p>	<p>Translate a recursive function into a closed form expression or formula for the nth term to solve a problem situation involving an iterative process; e.g., find the value of an annuity after 7 years.</p>	<p>11-D-2</p>			

Section 12-6 (The Fundamental Theorem of Calculus)	Describe and compare the characteristics of transcendental and periodic functions; e.g., general shape, number of roots, domain and range, asymptotic behavior, extrema, local and global behavior.	12-D-3			
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