Options EHS Precalculus A	Scope and Sequence
Unit Lesson	**Objectives**
Prerequisites	
Solving Polynomial Equations using Technology	
	Use technology to solve or approximate solutions of one-variable polynomial equations.
Complex Numbers	
	Represent square roots of negative numbers as multiples of i.
	Represent complex numbers in the form a + bi or in the complex plane.
	Simplify powers of i using their cyclic nature.
	Determine the absolute value of a complex number.
Performing Operations with Complex Numbers	
	Perform addition, subtraction, multiplication, and division of complex numbers.
	Identify the field properties of complex numbers.
The Quadratic Formula	
	Find real and complex solutions of quadratic equations using the quadratic formula.
	Use the discriminant to determine the number and type of roots of a quadratic equation.
Completing The Square	
	Recognize the pattern of a perfect-square trinomial as the square of a binomial.
	Use the square root property to solve equations.
	Find complex solutions to quadratic equations by completing the square.
Absolute Value Inequalities	
	Rewrite absolute value inequalities as compound inequalities.
	Solve absolute value inequalities graphically and algebraically.

Options EHS Precalculus A		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Quadratic Inequalities	
		Find real solutions of quadratic inequalities algebraically and graphically.
		Create quadratic inequalities in one variable and use them to solve problems.
	Test	
Functions and Their Graphs		
	Symmetry	
		Determine the symmetry of a relation from a graph.
		Determine the symmetry of a function algebraically.
	Comparing Characteristics of Functions	
		Determine the similarities and differences in characteristics of multiple functions graphically.
		Determine the similarities and differences in characteristics of multiple functions tabularly.
		Determine the similarities and differences in characteristics of multiple functions symbolically.
		Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).
	Piecewise Defined Functions	
		Graph piecewise defined functions.
		Evaluate piecewise defined functions.
		Determine the domain, range, and continuity of piecewise defined functions.
	Step Functions	
		Evaluate step functions.
		Analyze step functions to determine key features of the graph.
		Use step functions to model real-world problems.
	Absolute Value Functions	

Options EHS Precalculus A		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Analyze absolute value functions to determine key features of the graph.
		Model and solve mathematical and real-world problems with absolute value functions.
	Function Operations	
		Combine functions using arithmetic operations, expressing the results both algebraically and graphically.
		Evaluate sums, differences, products, and quotients of functions.
	Composition of Functions	
		Write an expression for the composition of functions.
		Find the domain of the composition of functions.
		Evaluate the composition of functions.
	Function Inverses	
		Find the inverse of a function.
		Use composition to verify that functions are inverses.
	Transformations of Functions	
		Identify a function as belonging to a family of functions.
		Analyze a function rule or graph to determine transformations of the parent function.
	Mathematical Modeling	
		Identify a mathematical model
		Solve problems using formulas as a model
		Develop a function model
		Recognize patterns and trends between two variables using tables as models
	Unit Test	
Polynomial Functions		

Options EHS Precalculus A		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Graphs of Polynomial Functions	
		Identify the key features of a polynomial function from a given graph.
		Describe the key features of a polynomial function.
	Synthetic Division and the Remainder Theorem	
		Use synthetic division to divide a polynomial by a linear factor.
		Apply the remainder theorem.
	The Fundamental Theorem of Algebra	
		Apply the fundamental theorem of algebra to determine the number of roots of a polynomial function.
		Use the complex conjugate theorem to factor and solve polynomial equations.
	Factoring Polynomials Completely	
		Analyze the structure of a polynomial to write it in completely factored form.
	Polynomial Inequalities	
		Solve polynomial inequalities having real coefficients.
		Apply polynomial inequalities to mathematical and real-world problems.
	Graphing Radical Functions	
		Relate transformations to the graphs of square root and cube root functions to their parent function.
		Determine the domain and range of square root and cube root functions.
	Unit Test	
Rational Functions		
	Vertical Asymptotes of Rational Functions	
		Determine the vertical asymptotes and holes in the graph of a rational function having the x-axis as its only horizontal asymptote.

Options EHS Precalculus A		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Solve problems involving inverse variation.
	Graphing Rational Functions	
		Determine the horizontal asymptotes of a rational function.
		Graph rational functions that have only vertical or horizontal asymptotes.
	Graphs of Rational Functions	
		Use algebraic techniques to determine key features of a rational function.
		Analyze key features of a rational function.
		Graph a rational function.
	Rational Inequalities	
		Solve rational inequalities algebraically and determine extraneous solutions.
	Modeling with Rational Functions	
		Model and solve real-world problems using rational functions.
	Unit Test	
Exponential, Logistic, and Logarithmic Functions		
	Graphing Exponential Functions	
		Identify exponential functions.
		Determine the domain and range of exponential functions.
		Graph exponential functions.
	Rewriting Exponential Functions	
		Write exponential functions and expressions in equivalent forms, using the properties of exponents to justify steps.
		Use alternative forms of an exponential function to highlight different information about that function and the real-world situation it models.

Options EHS Precalculus A		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Equations of Exponential Functions	
		Determine the equation of an exponential function that best fits the given data
		Make predictions using an exponential regression equation
		Determine whether a linear or exponential model best fits given data
	Exponential Growth Functions	
		Identify an exponential growth function given tables, graphs, and function rules, determining the rate of change.
		Graph an exponential growth function, and state the domain and range.
		State the domain and range of an exponential growth function.
		Write an exponential growth function to model a real-world problem, pointing out constraints in the modeling context.
	Exponential Decay Functions	
		Identify an exponential decay function given tables, graphs, and function rules, determining the rate of change.
		Graph an exponential decay function, and state the domain and range.
		Write an exponential decay function to model a real-world problem, pointing out constraints in the modeling context.
		Relate exponential growth and decay functions using laws of exponents and reflections over the y-axis.
	Graphing Logarithmic Functions	
		Identify logarithmic functions.
		Determine the domain and range of logarithmic functions.
		Identify and analyze the graphs of logarithmic functions.
	Evaluating Logarithmic Expressions	
		Evaluate logarithmic expressions by converting between logarithmic and exponential forms.
		Solve logarithmic equations by converting between logarithmic and exponential forms.

Unit	Lesson	Objectives
		Evaluate common logarithms using a calculator.
	Properties of Logarithms	
		Evaluate, expand, and simplify logarithmic expressions using properties of logarithms.
	Base e	
		Apply properties of logarithms and exponents to solve exponential and logarithmic equations having base e.
		Analyze exponential and logarithmic functions in base e to determine key features of the graph.
		Determine the domain and range of exponential and logarithmic functions in base e.
	Solving Logarithmic Equations using Technology	
		Rewrite logarithmic expressions using the change of base algorithm.
		Solve a one-variable equation containing logarithms by transforming it into a system of equations.
	Exponential, Logistic and Logarithmic Models	
		Interpret the numeric values in an exponential, logarithmic, or logistic function in terms of a context.
		Model a problem using an exponential, logarithmic, or logistic function.
		Solve a problem using an exponential, logarithmic, or logistic function.
	Solving Exponential Equations by Rewriting the Base	
		Solve exponential equations by rewriting bases.
	Solving Equations using Properties of Logarithms	
		Apply properties of logarithms to solve logarithmic equations.
		Determine extraneous solutions of logarithmic equations.
	Solving Exponential and Logarithmic Equations	

Options EHS Precalculus A		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Solve exponential and logarithmic equations using inverses, properties, and algorithms.
	Modeling with Exponential and Logarithmic Equations	
		Model and solve real-world problems using exponential and logarithmic functions.
	Test	
Cumulative Exam		
	Cumulative Exam Review	
	Cumulative Exam	