Standard ID	Standard Text	Edgenuity Lesson Name
HSA	Algebra	
HSA-CED	Creating Equations	
HSA-CED.A	Create equations that describe numbers or relationships.	
HSA-CED.A.1	Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.	
		Modeling with Exponential and Logarithmic Equations
		Rational Inequalities
HSA-CED.A.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.	
		Conic Inequalities
		Exponential and Logarithmic Inequalities
		Polynomial Inequalities
		Systems of Inequalities
HSA-REI	Reasoning with Equations and Inequalities	
HSA-REI.C	Solve systems of equations.	
HSA-REI.C.8	(+) Represent a system of linear equations as a single matrix equation in a vector variable.	
		Cramer's Rule
		Matrices and Row Operations
		Modeling with Matrices
		Solving Matrix Equations
HSA-REI.C.9	(+) Find the inverse of a matrix if it exists and use it to solve systems of linear equations (using technology for matrices of dimension 3 x 3 or greater).	
		Matrices and Their Inverses
		Modeling with Matrices
		Solving Matrix Equations
HSA-SSE	Seeing Structure in Expressions	
HSA-SSE.A	Interpret the structure of expressions.	
HSA-SSE.A.2	Use the structure of an expression to identify ways to rewrite it. For example, see x^4 - y^4 as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.	
		Partial Fractions
HSF	Functions	
HSF-BF	Building Functions	
HSF-BF.A	Build a function that models a relationship between two quantities.	
HSF-BF.A.1	Write a function that describes a relationship between two quantities.	

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HSF-BF.A.1a	Determine an explicit expression, a recursive process, or steps for calculation from a context.	
		Arithmetic Sequences
		Arithmetic Series
		Finite Geometric Series
		Geometric Sequences
		Infinite Geometric Series
		Modeling with Sequences and Series
		Recursive Formulas
		Summation Notation
HSF-BF.A.1c	(+) Compose functions. For example, if T(y) is the temperature in the atmosphere as a function of height, and h(t) is the height of a weather balloon as a function of time, then T(h(t)) is the temperature at the location of the weather balloon as a function of time.	
		Composition of Functions and Modeling
HSF-BF.B	Build new functions from existing functions.	
HSF-BF.B.3	Identify the effect on the graph of replacing f(x) by f(x) + k, k f(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.	
		Functions and Transformations
		General Form of Sine and Cosine
		Graphing Cosecant and Secant Functions
		Graphing Sine and Cosine Functions
		Graphing Tangent and Cotangent
HSF-BF.B.4	Find inverse functions.	
HSF-BF.B.4b	(+) Verify by composition that one function is the inverse of another.	
		Inverse of a Function
HSF-BF.B.4c	(+) Read values of an inverse function from a graph or a table, given that the function has an inverse.	
		Comparing a Function and Its Inverse
		Inverse of a Function
HSF-BF.B.4d	(+) Produce an invertible function from a non-invertible function by restricting the domain.	
		Inverse of a Function
HSF-BF.B.5	(+) Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents.	
		Inverse of a Function
HSF-IF	Interpreting Functions	
HSF-IF.B	Interpret functions that arise in applications in terms of the context.	

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HSF-IF.B.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.	
		General Form of Sine and Cosine Graphing Sine and Cosine Functions
HSF-IF.C	Analyze functions using different representations.	
HSF-IF.C.7	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using	
HSF-IF.C.7d	(+) Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.	
		Graphs of Rational Functions
HSF-IF.C.7e	Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.	
		General Form of Sine and Cosine Graphing Cosecant and Secant Functions Graphing Sine and Cosine Functions Graphing Tangent and Cotangent
HSF-LE	Linear, Quadratic, and Exponential Models	
HSF-LE.B	Interpret expressions for functions in terms of the situation they model.	
HSF-LE.B.5	Interpret the parameters in a linear or exponential function in terms of a context.	
		Modeling with Exponential and Logarithmic Equations
HSF-TF	Trigonometric Functions	
HSF-TF.A	Extend the domain of trigonometric functions using the unit circle.	
HSF-TF.A.3	(+) Use special triangles to determine geometrically the values of sine, cosine, tangent for $\pi/3$, $\pi/4$ and $\pi/6$, and use the unit circle to express the values of sine, cosines, and tangent for $\pi-x$, $\pi+x$, and $2\pi-x$ in terms of their values for x, where x is any real number.	
		Trigonometric Difference Identities Trigonometric Double Angle Identities Trigonometric Half Angle Identities Trigonometric Sum Identities
HSF-TF.A.4	(+) Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.	
		Angles and Trigonometric Functions
HSF-TF.B	Model periodic phenomena with trigonometric functions.	

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HSF-TF.B.5	Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.	
		General Form of Sine and Cosine
		Performance Task: Modeling with Sinusoidal Functions
HSF-TF.B.6	(+) Understand that restricting a trigonometric function to a domain on which it is always increasing or always decreasing allows its inverse to be constructed.	
		Inverse Trigonometric Functions
		Solving Trigonometric Equations
HSF-TF.B.7	(+) Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions	
		Solving Trigonometric Equations
HSF-TF.C	Prove and apply trigonometric identities.	
HSF-TF.C.8	Prove the Pythagorean identity $\sin^2(\theta) + \cos^2(\theta) = 1$ and use it to find $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ given $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ and the quadrant of the angle.	
		Angles and Trigonometric Functions
HSF-TF.C.9	(+) Prove the addition and subtraction formulas for sine, cosine, and tangent and use them to solve problems.	
		Trigonometric Difference Identities
		Trigonometric Double Angle Identities
		Trigonometric Sum Identities
HSG	Geometry	
HSG-GMD	Geometric Measurement and Dimension	
HSG-GMD.B	Visualize the relation between two-dimensional and three-dimensional objects.	
HSG-GMD.B.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.	
		Conic Sections
HSG-GPE	Expressing Geometric Properties with Equations	
HSG-GPE.A	Translate between the geometric description and the equation for a conic section.	
HSG-GPE.A.1	Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.	
		Conic Inequalities
		Conic Sections
		The General Equation of Conic Sections
HSG-GPE.A.2	Derive the equation of a parabola given a focus and directrix.	
		Conic Sections
HSG-GPE.A.3	(+) Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant.	
		Equations of Ellipses

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HSG-GPE.A.3	(+) Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant. *(cont'd)*	
		Equations of Hyperbolas Equations of Hyperbolas (continued) Performance Task: Graphing Conic Sections
HSG-MG	Modeling with Geometry	
HSG-MG.A	Apply geometric concepts in modeling situations.	
HSG-MG.A.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).*	
		Applications of Conics
HSG-SRT	Similarity, Right Triangles, and Trigonometry	
HSG-SRT.D	Apply trigonometry to general triangles.	
HSG-SRT.D.10	(+) Prove the Laws of Sines and Cosines and use them to solve problems.	
		Law of Sines and Law of Cosines — a Deeper Look
HSG-SRT.D.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).	
		Law of Sines and Law of Cosines — a Deeper Look
HSN	Number and Quantity	
HSN-CN	The Complex Number System	
HSN-CN.A	Perform arithmetic operations with complex numbers.	
HSN-CN.A.1	Know there is a complex number i such that $i^2 = -1$, and every complex number has the form a + bi with a and b real.	
		Performing Operations with Complex Numbers
HSN-CN.A.2	Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.	
		Performing Operations with Complex Numbers
HSN-CN.A.3	(+) Find the conjugate of a complex number; use conjugates to find moduli and quotients of complex numbers.	
		Multiply and Divide Complex Numbers Performing Operations with Complex Numbers Polar Form of Complex Numbers

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HSN-CN.B	Represent complex numbers and their operations on the complex plane.	
HSN-CN.B.4	(+) Represent complex numbers on the complex plane in rectangular and polar form (including real and imaginary numbers), and explain why the rectangular and polar forms of a given complex number represent the same number.	
		Graphing Polar Equations Polar Form of Complex Numbers
HSN-CN.B.5	(+) Represent addition, subtraction, multiplication, and conjugation of complex numbers geometrically on the complex plane; use properties of this representation for computation. For example, $(-1 + \sqrt{3}i)^3 = 8$ because $(-1 + \sqrt{3}i)$ has modulus 2 and argument 120°.	
		Add and Subtract Complex Numbers Multiply and Divide Complex Numbers Powers and Roots of Complex Numbers
HSN-CN.B.6	(+) Calculate the distance between numbers in the complex plane as the modulus of the difference, and the midpoint of a segment as the average of the numbers at its endpoints.	
		Distance and Midpoints in the Complex Plane
HSN-VM	Vector and Matrix Quantities	
HSN-VM.A	Represent and model with vector quantities.	
HSN-VM.A.1	(+) Recognize vector quantities as having both magnitude and direction. Represent vector quantities by directed line segments, and use appropriate symbols for vectors and their magnitudes (e.g., v, |v|,||v||, v).	
		Vectors and Their Components
HSN-VM.A.2	(+) Find the components of a vector by subtracting the coordinates of an initial point from the coordinates of a terminal point.	
		Vectors and Their Components
HSN-VM.A.3	(+) Solve problems involving velocity and other quantities that can be represented by vectors.	
		Graphing Parametric Equations Applying Vectors in the Plane Dot Product and Work
HSN-VM.B	Perform operations on vectors.	
HSN-VM.B.4	(+) Add and subtract vectors.	
HSN-VM.B.4a	Add vectors end-to-end, component-wise, and by the parallelogram rule. Understand that the magnitude of a sum of two vectors is typically not the sum of the magnitudes.	
		Vector Addition and Subtraction
HSN-VM.B.4b	Given two vectors in magnitude and direction form, determine the magnitude and direction of their sum.	
		Vector Addition and Subtraction

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HSN-VM.B.4c	Understand vector subtraction v - w as v + (-w), where -w is the additive inverse of w, with the same magnitude as w and pointing in the opposite direction. Represent vector subtraction graphically by connecting the tips in the appropriate order, and perform vector subtraction component-wise.	
		Vector Addition and Subtraction
HSN-VM.B.5	(+) Multiply a vector by a scalar.	
HSN-VM.B.5a	Represent scalar multiplication graphically by scaling vectors and possibly reversing their direction; perform scalar multiplication component-wise, e.g., as c(vx, vy) = (cvx, cvy).	
		Vectors and Their Components
HSN-VM.B.5b	Compute the magnitude of a scalar multiple cv using $\|\|cv\|\| = \|c\|v$. Compute the direction of cv knowing that when $\|c\|v \neq 0$, the direction of cv is either along v (for $c > 0$) or against v (for $c < 0$).	
		Vectors and Their Components
HSN-VM.C	Perform operations on matrices and use matrices in applications.	
HSN-VM.C.6	(+) Use matrices to represent and manipulate data, e.g., to represent payoffs or incidence relationships in a network.	
		Introduction to Matrices Scalar and Matrix Multiplication Vector Multiplication Using Matrices
HSN-VM.C.7	(+) Multiply matrices by scalars to produce new matrices, e.g., as when all of the payoffs in a game are doubled.	
		Scalar and Matrix Multiplication
HSN-VM.C.8	(+) Add, subtract, and multiply matrices of appropriate dimensions.	
		Adding and Subtracting Matrices Scalar and Matrix Multiplication
HSN-VM.C.9	(+) Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributive properties.	
		Scalar and Matrix Multiplication
HSN-VM.C.10	(+) Understand that the zero and identity matrices play a role in matrix addition and multiplication similar to the role of 0 and 1 in the real numbers. The determinant of a square matrix is nonzero if and only if the matrix has a multiplicative inverse.	
		Adding and Subtracting Matrices Matrices and Their Inverses Scalar and Matrix Multiplication
HSN-VM.C.11	(+) Multiply a vector (regarded as a matrix with one column) by a matrix of suitable dimensions to produce another vector. Work with matrices as transformations of vectors.	
		Vector Multiplication Using Matrices

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HSN-VM.C.12	(+) Work with 2 x 2 matrices as a transformations of the plane, and interpret the absolute value of the determinant in terms of area.	
		Determinants Scalar and Matrix Multiplication
MP.	Mathematical Practices	
MP.1	Make sense of problems and persevere in solving them.	
		Matrices and Row Operations Partial Fractions Understanding the Concept of a Limit
MP.2	Reason abstractly and quantitatively.	
		Finding Limits Limits and Continuity Limits, Asymptotes, and End Behavior Understanding the Concept of a Limit
MP.3	Construct viable arguments and critique the reasoning of others.	
		Trigonometric Difference Identities Trigonometric Half Angle Identities Trigonometric Sum Identities
MP.4	Model with mathematics.	
		Linear and Angular Velocity Modeling with Matrices Modeling with Sequences and Series Performance Task: Modeling with Sinusoidal Functions
MP.5	Use appropriate tools strategically.	
		Cramer's Rule Solving Matrix Equations Solving Trigonometric Inequalities
MP.6	Attend to precision.	
		Limits as They Relate to Sequences and Series Trigonometric Difference Identities Trigonometric Double Angle Identities Trigonometric Half Angle Identities Trigonometric Sum Identities

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MP.7	Look for and make use of structure.	
		Finding Limits
		Partial Fractions
		Performing Operations with Complex Numbers
		Polar Form of Complex Numbers
		Summation Properties and Rules
MP.8	Look for and express regularity in repeated reasoning.	
		Arithmetic Sequences
		Arithmetic Series
		Finite Geometric Series
		Geometric Sequences
		Graphing Cosecant and Secant Functions
		Graphing Sine and Cosine Functions
		Graphing Tangent and Cotangent
		Infinite Geometric Series
		Modeling with Sequences and Series
		Recursive Formulas