Standard ID	Standard Text	Edgenuity Lesson Name
HSA-APR	Arithmetic with Polynomials and Rational Functions	
HSA-APR.A	Perform arithmetic operations on polynomials.	
HSA-APR.A.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.	Addition and Subtraction of Polynomials Division of Polynomials Multiplication of Polynomials
HSA-APR.B	Understand the relationship between zeros and factors of polynomials.	
HSA-APR.B.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).	Synthetic Division and the Remainder Theorem Writing Polynomial Functions
HSA-APR.B.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.	The Rational Roots Theorem
HSA-APR.C	Use polynomial identities to solve problems.	
HSA-APR.C.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.	The Binomial Theorem
HSA-APR.C.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
HSA-APR.D	Rewrite rational expressions.	
HSA-APR.D.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.	Division of Polynomials Simplifying Rational Expressions

Standard ID	Standard Text	Edgenuity Lesson Name
HSA-APR.D.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.	
		Adding and Subtracting Rational Expressions
		Multiplying and Dividing Rational Expressions
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.	
		Performance Task: Going on a Round Trip
		Quadratic Inequalities
		Rational Equations
HSA-CED.A.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	
		Modeling with Periodic Functions
		Performance Task: Going on a Round Trip
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.	
		Performance Task: Going on a Rational Equations
		Solving Exponential Equations by Rewriting the Base
HSA-CED.A.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law V = IR to highlight resistance R.	
		Performance Task: Going on a Round Trip
HSA-REI	Reasoning with Equations and Inequalities	
HSA-REI.A	Understand solving equations as a process of reasoning and explain the reasoning.	

Standard ID	Standard Text	Edgenuity Lesson Name
HSA-REI.A.2	Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.	
		Adding and Subtracting Radicals
		Dividing Radicals
		Multiplying Radicals
		Radical Equations and Extraneous Roots
		Rational Equations
HSA-REI.D	Represent and solve equations and inequalities graphically.	
HSA-REI.D.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.	
		Absolute Value Functions
		Rational Equations
		Solving Exponential and Logarithmic Equations
		Solving Logarithmic Equations using Technology
		Solving One-Variable Equations with Systems
		Solving Polynomial Equations using Technology
HSA-SSE	Seeing Structure in Expressions	
HSA-SSE.A	Interpret the structure of expressions.	
HSA-SSE.A.1	Interpret expressions that represent a quantity in terms of its context.	
HSA-SSE.A.1.a	Interpret parts of an expression, such as terms, factors, and coefficients.	
		Adding and Subtracting Rational Expressions
		Factoring Polynomials Completely
		Multiplying and Dividing Rational Expressions
		Performance Task: Going on a Round Trip
		Simplifying Rational Expressions

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HSA-SSE.A.1.b	Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret $P(1+r)^n$ as the product of P and a factor not depending on P.	Factoring Polynomials Completely Performance Task: Going on a Round Trip Solving Exponential Equations by Rewriting the Base
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 $(x^2 - y^2)(x^2 + y^2)$.	Performance Task: Going on a Round Trip Quadratic in Form Polynomials
HSA-SSE.B.	Write expressions in equivalent forms to solve problems.	
HSA-SSE.B.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.	Geometric Series
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.	
HSF-BF.A.1.b	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.	Function Operations
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.	Absolute Value Functions Graphing Exponential Functions Graphing Logarithmic Functions Graphing Radical Functions Graphing Sine and Cosine Square Root Functions

Standard ID	Standard Text	Edgenuity Lesson Name
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. *(cont'd)*	
		Symmetry
		Transformations of Quadratic Functions
HSF-BF.B.4	Find inverse functions.	
HSF-BF.B.4.a	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, $f(x) = 2x^3$ for $x > 0$ or $f(x) = (x+1)/(x-1)$ for $x \neq 1$.	
		Evaluating Logarithmic Expressions
		Graphing Logarithmic Functions
		Modeling with Periodic Functions
		Square Root Functions
HSF-IF	Interpreting Functions	
HSF-IF.B	Interpret functions that arise in applications in terms of the context.	
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.	
		Absolute Value Functions
		Completing the Square
		Graphing Exponential Functions
		Graphing Logarithmic Functions
		Graphing Radical Functions
		Graphing Sine and Cosine
		Modeling with Periodic Functions
		Performance Task: Production Schemes
		Piecewise Defined Functions
		Square Root Functions
		Step Functions

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HSF-IF.B.5	Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.	
		Absolute Value Functions Comparing Characteristics of Functions Graphing Exponential Functions Graphing Logarithmic Functions Graphing Radical Functions Graphing Sine and Cosine Modeling with Periodic Functions Performance Task: Production Schemes Piecewise Defined Functions Relations and Functions Square Root Functions Step Functions
HSF-IF.B.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.	
		Rate of Change
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 technology for more complicated cases.	
HSF-IF.C.7.b	Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.	
		Absolute Value Functions Graphing Radical Functions Piecewise Defined Functions Square Root Functions Step Functions The Cubing Function Performance Task: Production Schemes
HSF-IF.C.7.c	Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.	
		Graphing Polynomial Functions

Standard ID	Standard Text	Edgenuity Lesson Name
HSF-IF.C.7.e	Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.	
		Base e
		Changes in Period and Phase Shift of Sine and Cosine Functions
		Graphing Exponential Functions
		Graphing Logarithmic Functions
		Graphing Sine and Cosine
		Modeling with Exponential and Logarithmic Equations
HSF-IF.C.8	Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.	
HSF-IF.C.8.a	Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.	
		Completing the Square
		Modeling with Quadratic Equations
		Solving Quadratic Equations by Factoring
HSF-IF.C.8.b	Use the properties of exponents to interpret expressions for exponential functions. For example, identify percent rate of change in functions such as $y = (1.02)^t$, $y = (0.97)^t$, $y = (1.01)^{12t}$, $y = (1.2)^{t/10}$, and classify them as representing exponential growth or decay.	
		Negative Exponents
HSF-IF.C.9	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.	
		Comparing Characteristics of Functions
HSF-LE	Linear, Quadratic, and Exponential Models	
HSF-LE.A	Construct and compare linear and exponential models and solve problems.	
HSF-LE.A.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.	
		Evaluating Logarithmic Expressions

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HSF-LE.A.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. *(cont'd)*	
		Modeling with Exponential and Logarithmic Equations
		Properties of Logarithms
		Solving Equations using Properties of Logarithms
		Solving Exponential and Logarithmic Equations
		Solving Logarithmic Equations using Technology
HSF-TF	Trigonometric Functions	
HSF-TF.A	Extend the domain of trigonometric functions using the unit circle.	
HSF-TF.A.1	Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.	
		Radian Measure
HSF-TF.A.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.	
		Evaluating the Six Trigonometric Functions
		The Unit Circle
HSF-TF.B	Model periodic phenomena with trigonometric functions.	
HSF-TF.B.5	Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.	
		Graphing Sine and Cosine
		Modeling with Periodic Functions
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.	
		Evaluating the Six Trigonometric Functions
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.	
		Complex Numbers

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HSN-CN.A.2	Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.	Operations with Complex Numbers
HSN-CN.C	Use complex numbers in polynomial identities and equations.	
HSN-CN.C.7	Solve quadratic equations with real coefficients that have complex solutions.	Completing the Square The Quadratic Formula
HSN-CN.C.8	(+) Extend polynomial identities to the complex numbers. For example, rewrite $x^2 + 4$ as $(x + 2i)(x - 2i)$.	Quadratic in Form Polynomials The Fundamental Theorem of Algebra
HSN-CN.C.9	(+) Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.	Completing the Square The Fundamental Theorem of Algebra The Quadratic Formula Writing Polynomial Functions
HSS-IC	Making Inferences and Justifying Conclusions	
HSS-IC.A	Understand and evaluate random processes underlying statistical experiments	
HSS-IC.A.1	Understand that statistics is a process for making inferences about population parameters based on a random sample from that population.	Designing a Study Representing Data
HSS-IC.A.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?	Statistical Inferences
HSS-IC.B	Make inferences and justify conclusions from sample surveys, experiments and observational studies	
HSS-IC.B.3	Recognize the purposes of and differences among sample surveys, experiments and observational studies; explain how randomization relates to each.	Designing a Study
HSS-IC.B.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.	Standard Deviation

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HSS-IC.B.5	Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.	
		Hypothesis Testing
HSS-IC.B.6	Evaluate reports based on data.	
		Representing Data
HSS-ID	Interpreting Categorical and Quantitative Data	
HSS-ID.A	Summarize, represent, and interpret data on a single count or measurement variable	
HSS-ID.A.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.	
		Applications with Standard Normal Distribution
		Introduction to Normal Distributions
		Properties of Probability Distributions
		Standard Deviation
HSS-MD	Using Probability to Make Decisions	
HSS-MD.B	Use probability to evaluate outcomes of decisions	
HSS-MD.B.6	(+) Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).	
		Expected Value
HSS-MD.B.7	(+) Analyze decisions and strategies using probability concepts (e.g. product testing, medical testing, pulling a hockey goalie at the end of a game).	
		Binomial Distribution
		Expected Value
	Mathematical Practices	
MP1	Make sense of problems and persevere in solving them.	
		Evaluating Logarithmic Expressions
		Modeling with Exponential and Logarithmic Equations
		Modeling with Quadratic Equations
		Multiplication of Polynomials
		Rate of Change

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MP2	Reason abstractly and quantitatively.	Hypothesis Testing Performance Task: Going on a Round Trip Rate of Change Statistical Inferences
MP3	Construct viable arguments and critique the reasoning of others.	Evaluating the Six Trigonometric Functions The Unit Circle
MP4	Model with mathematics.	Modeling with Exponential and Logarithmic Equations Modeling with Periodic Functions Modeling with Quadratic Equations Step Functions
MP5	Use appropriate tools strategically.	Solving Logarithmic Equations using Technology Solving Polynomial Equations using Technology
MP6	Attend to precision.	Graphing Exponential Functions Graphing Logarithmic Functions Graphing Radical Functions Graphing Sine and Cosine Modeling with Exponential and Logarithmic Equations

Standard ID	Standard Text	Edgenuity Lesson Name
		Modeling with Periodic Functions Representing Data Step Functions
MP7	Look for and make use of structure.	Completing the Square Performance Task: Going on a Round Trip Quadratic in Form Polynomials
MP8	Look for and express regularity in repeated reasoning.	Completing the Square Performance Task: Going on a Round Trip Quadratic in Form Polynomials