Standard ID	Standard Text	Edgenuity Lesson Name
N-Q	**Quantities**	
	Reason quantitatively and use units to solve problems.	
N-Q.1	Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.	Scatterplots
N-Q.2	Define appropriate quantities for the purpose of descriptive modeling.	Scatterplots
N-Q.3	Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	Scatterplots
N-CN	**The Complex Number System**	
	Perform arithmetic operations with complex numbers.	
N-CN.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 Operations with Complex Numbers Writing Polynomial Functions from Complex Roots
N-CN.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 Writing Polynomial Functions from Complex Roots Simplifying Rational Expressions by Factoring
N-CN.3	Find the conjugate of a complex number; use conjugates to find moduli and quotients of complex numbers.	
	Use complex numbers in polynomial identities and equations.	
N-CN.7	Solve quadratic equations with real coefficients that have complex solutions.	The Quadratic Formula The Fundamental Theorem of Algebra
N-CN.8	Extend polynomial identities to the complex numbers.	The Fundamental Theorem of Algebra Writing Polynomial Functions from Complex Roots
N-CN.9	Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.	The Rational Roots Theorem The Fundamental Theorem of Algebra

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A-SSE	**Seeing Structure in Expressions**	
	Interpret the structure of expressions	
A-SSE.1	Interpret expressions that represent a quantity in terms of its context.	
A-SSE.1.a	Interpret parts of an expression, such as terms, factors, and coefficients.	
		Real Numbers Simplifying Expressions Introduction to Polynomials Addition and Subtraction of Polynomials Laws of Exponents Multiplication of Polynomials Sum and Difference of Two Cubes Factoring Polynomials Completely Simplifying Polynomial Expressions
A-SSE.1.b	Interpret complicated expressions by viewing one or more of their parts as a single entity.	
		Simplifying Expressions The Fundamental Theorem of Algebra

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A-SSE.2	Use the structure of an expression to identify ways to rewrite it.	
		Laws of Exponents
		Simplifying Polynomial Expressions
		Quadratic in Form Polynomials
		Negative Exponents
		Simplifying Rational Expressions
		Simplifying Rational Expressions by Factoring
		Simplifying Perfect Roots
		Simplifying Nonperfect Roots
		Rational Exponents
		Adding and Subtracting Radicals
		Multiplying Radicals
		Dividing Radicals
		Solving Exponential Equations by Rewriting the Base
		Evaluating Logarithmic Expressions
		Properties of Logarithms
		Base e
		Solving Exponential and Logarithmic Equations
		Modeling with Exponential and Logarithmic Equations
		Geometric Series
A-APR	**Arithmetic with Polynomials and Rational Expressions**	
	Perform arithmetic operations on polynomials	
A-APR.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
		Laws of Exponents
		Multiplication of Polynomials
		Simplifying Polynomial Expressions
	Understand the relationship between zeros and factors of polynomials	
A-APR.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

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A-APR.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.	
		Graphs of Polynomial Functions
		Graphing Polynomial Functions
		Solving Polynomial Equations using Technology
	Use polynomial identities to solve problems	
A-APR.4	Prove polynomial identities and use them to describe numerical relationships.	
		Sum and Difference of Two Cubes
		Factoring Polynomials Completely
A-APR.5	Know and apply the Binomial Theorem for the expansion of (x + y) to the n power 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
	Rewrite rational expressions	
A-APR.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
		Synthetic Division and the Remainder Theorem
A-APR.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.	
		Division of Polynomials
		Simplifying Rational Expressions
		Simplifying Rational Expressions by Factoring
		Multiplying and Dividing Rational Expressions
		Adding and Subtracting Rational Expressions
A-CED	**Creating Equations**	
	Create equations that describe numbers or relationships	
A-CED.1	Create equations and inequalities in one variable and use them to solve problems.	
		Properties of Equality
		Solving Equations
		Inequalities
		Problem Solving
		Word Problems
		Performance Task: Going on a Round Trip

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A-CED.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	
		Writing Two-Variable Linear Equations
		Scatterplots
		Two-Variable Linear Inequalities
		Modeling with Linear Systems
		Performance Task: Annual Salaries and Gender
		Solving Exponential and Logarithmic Equations
		Modeling with Exponential and Logarithmic Equations
A-CED.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.	
		Linear Programming
A-CED.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.	
		Literal Equations
A-REI	**Reasoning with Equations and Inequalities**	
	Understand solving equations as a process of reasoning and explain the reasoning	
A-REI.1	Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.	
A-REI.2	Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.	
		Rational Equations
		Rational Inequalities
		Radical Equations and Extraneous Roots
		Solving Equations Containing Two Radicals
		Performance Task: Roller Coaster Design
	Represent and solve equations and inequalities graphically	
A-REI.10	Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).	
		Linear Functions
		Quadratic Functions

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A-REI.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.	Solving Linear Systems Graphically Solving One-Variable Equations with Systems Performance Task: Annual Salaries and Gender Solving Polynomial Equations using Technology
A-REI.12	Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.	
F-IF	**Interpreting Functions** Understand the concept of a function and use function notation	
F-IF.1	Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then f(x) denotes the output of f corresponding to the input x. The graph of f is the graph of the equation y = f(x).	Relations and Functions
F-IF.2	Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.	
F-IF.3	Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers.	

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	Interpret functions that arise in applications in terms of the context	
F-IF.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.	
		Exploration of the Graphing Calculator
		Symmetry
		Rate of Change
		Linear Functions
		Scatterplots
		Two-Variable Linear Inequalities
		Quadratic Functions
		Quadratic Inequalities
		Modeling with Quadratic Equations
		Solving Linear Systems Graphically
		Linear Programming
		Solving One-Variable Equations with Systems
		Performance Task: Annual Salaries and Gender
		Graphing Rational Functions
		Graphing Exponential Functions
		Modeling with Functions
		Performance Task: Production Schemes
F-IF.5	Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.	
		Relations and Functions
		Function Inverses
		Square Root Functions
		Graphing Logarithmic Functions
		Transformations of Functions
		Domain and Range
		Analyzing Compositions of Functions
		Performance Task: Production Schemes
F-IF.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

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	Analyze functions using different representations	
F-IF.7	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.	
F-IF.7.a	Graph linear and quadratic functions and show intercepts, maxima, and minima.	
		Linear Functions
F-IF.7.b	Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.	
		Square Root Functions
		Graphing Radical Functions
		Absolute Value Functions
		Piecewise Defined Functions
		Step Functions
		Performance Task: Production Schemes
F-IF.7.c	Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.	
		Monomial Functions
		Graphs of Polynomial Functions
		Graphing Polynomial Functions
		Solving Polynomial Equations using Technology
F-IF.7.d	Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.	
F-IF.7.e	Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.	
		Graphing Exponential Functions
		Graphing Logarithmic Functions
F-IF.8	Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.	
F-IF.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.	
		Solving Quadratic Equations by Factoring
		Completing the Square
		Modeling with Quadratic Equations

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F-IF.8.b	Use the properties of exponents to interpret expressions for exponential functions.	
		Graphing Exponential Functions
		Solving Exponential Equations by Rewriting the Base
		Solving Exponential and Logarithmic Equations
		Modeling with Exponential and Logarithmic Equations
F-IF.9	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	
		Transformations of Functions
		Modeling with Functions
		Performance Task: Production Schemes
F-BF	**Building Functions**	
	Build a function that models a relationship between two quantities	
F-BF.1	Write a function that describes a relationship between two quantities.	
F-BF.1.a	Determine an explicit expression, a recursive process, or steps for calculation from a context.	
F-BF.1.b	Combine standard function types using arithmetic operations.	
		Function Operations
		Composition of Functions
		Composition of Polynomial Functions
F-BF.1.c	Compose functions.	
		Composition of Functions
F-BF.2	Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.	
	Build new functions from existing functions	
F-BF.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.	
		Transformations of Quadratic Functions
		Transformations of Functions
F-BF.4	Find inverse functions.	
F-BF.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.	
		Function Inverses
		Square Root Functions

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F-BF.4.b	Verify by composition that one function is the inverse of another.	
F-BF.4.c	Read values of an inverse function from a graph or a table, given that the function has an inverse.	
F-BF.4.d	Produce an invertible function from a non-invertible function by restricting the domain.	
F-BF.5	Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents.	
F-TF	**Trigonometric Functions**	
	Extend the domain of trigonometric functions using the unit circle	
F-TF.1	Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.	
		Angles in Standard Position
		Radian Measure
F-TF.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.	
		The Unit Circle
		Reciprocal Trigonometric Functions
		Evaluating the Six Trigonometric Functions
F-TF.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, cosine, and tangent for pi-x, pi+x, and 2pi-x in terms of their values for x, where x is any real number.	
F-TF.4	Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.	
	Model periodic phenomena with trigonometric functions	
F-TF.5	Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.	
		Graphing Sine and Cosine
		Changes in Period and Phase Shift of Sine and Cosine Functions
		Solving Trigonometric Equations
		Modeling with Periodic Functions
F-TF.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.	
F-TF.7	Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.	
		Right Triangle Trigonometry
		Reciprocal Trigonometric Functions

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	Prove and apply trigonometric identities	
F-TF.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
F-TF.9	Prove the addition and subtraction formulas for sine, cosine, and tangent and use them to solve problems.	
S-ID	**Interpreting Categorical and Quantitative Data**	
	Summarize, represent, and interpret data on a single count or measurement variable	
S-ID.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.	Standard Deviation Introduction to Normal Distributions Applications with Standard Normal Distribution Statistical Inferences Hypothesis Testing
	Summarize, represent, and interpret data on two categorical and quantitative variables	
S-ID.5	Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.	
S-ID.6	Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.	
S-ID.6.a	Fit a function to the data; use functions fitted to data to solve problems in the context of the data.	Scatterplots
S-ID.6.b	Informally assess the fit of a function by plotting and analyzing residuals.	Scatterplots
S-ID.6.c	Fit a linear function for a scatter plot that suggests a linear association.	Scatterplots
	Interpret linear models	
S-ID.7	Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.	Linear Functions
S-ID.8	Compute (using technology) and interpret the correlation coefficient of a linear fit.	Scatterplots
S-ID.9	Distinguish between correlation and causation.	Scatterplots

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S-IC	Making Inferences and Justifying Conclusions Understand and evaluate random processes underlying statistical experiments	
S-IC.1	Understand statistics as a process for making inferences about population parameters based on a random sample from that population.	Statistical Inferences Hypothesis Testing
S-IC.2	Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation.	Properties of Probability Distributions Expected Value Binomial Distribution
	Make inferences and justify conclusions from sample surveys, experiments, and observational studies	
S-IC.3	Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.	Designing a Study
S-IC.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.	Statistical Inferences
S-IC.5	Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.	Binomial Distribution Hypothesis Testing
S-IC.6	Evaluate reports based on data.	Representing Data Statistical Inferences Hypothesis Testing