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.	Bar and Circle Graphs Scale Drawings Data Distribution Misleading Graphs Organizing Data Scatterplots
N-Q.2.	Define appropriate quantities for the purpose of descriptive modeling.	Proportional Reasoning Unit Analysis
WA.A.	Algebra	
A-SSE.	Seeing Structure in Expressions	
	Interpret the structure of expressions.	
A-SSE.3.	Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.	
A-SSE.3(c)	Use the properties of exponents to transform expressions for exponential functions. For example the expression 1.15^t can be rewritten as (1.15^(1/12))^12t approximately equals 1.012^12t to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.	Consecutive Growth and Decay Factors Equations of Exponential Functions Exponential Functions Growth and Decay Factors Population Growth Use Exponential Functions
A-APR.	Arithmetic with Polynomials and Rational Functions	
	Understand the relationship between zeros and factors of polynomials.	
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.	Parabolas Quadratic Regression Models Solving Quadratic Equations The Quadratic Formula

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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. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.	Constant of Variation Domain and Range Equations of Exponential Functions Expressions and Formulas Inverse Variation Linear Inequalities
A-CED.2.	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	Constant of Variation Domain and Range Equations of Exponential Functions Expressions and Formulas Inverse Variation Parabolas Problem-Solving Quadratic Equations Quadratic Functions Quadratic Regression Models Reading Graphs Slope-Intercept Form Solving Quadratic Equations Solving an Equation The Quadratic Formula Write Linear Equations using Slope & y-Intercepts Write Linear Equations using Two Points Write and Solve Equations

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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. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.	Break-Even Points Constant of Variation Domain and Range Equations of Exponential Functions Expressions and Formulas Inverse Variation Linear Inequalities Problem-Solving Slope-Intercept Form Systems of Equations Write Linear Equations using Slope & y-Intercepts Write Linear Equations using Two Points
A-CED.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.	Write and Solve 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.	Direct Variation Mathematical Modeling Solving an Equation Write and Solve Equations
	Solve equations and inequalities in one variable.	
A-REI.3.	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	Linear Inequalities Solving an Equation Write and Solve Equations
A-REI.4.	Solve quadratic equations in one variable.	
A-REI.4(a)	Use the method of completing the square to transform any quadratic equation in x into an equation of the form (x - p)^2 = q that has the same solutions. Derive the quadratic formula from this form.	Quadratic Regression Models The Quadratic Formula

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A-REI.4(b)	Solve quadratic equations by inspection (e.g., for x^2 = 49), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as a plus-minus bi for real numbers a and b.	Direct Variation Quadratic Functions Quadratic Regression Models Solving Quadratic Equations The Quadratic Formula
	Solve systems of equations.	
A-REI.6.	Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.	Break-Even Points Systems of Equations
	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).	Reading Graphs Solving an Equation Write Linear Equations using Slope & y-Intercepts Write and Solve Equations
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.	Break-Even Points Systems of Equations
WA.F.	Functions	
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).	Domain and Range Mathematical Modeling Understand 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.	Domain and Range Mathematical Modeling

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F-IF.3.	Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. For example, the Fibonacci sequence is defined recursively by f(0) = f(1) = 1, f(n+1) = f(n) + f(n-1) for n greater than or equal to 1.	Relationships in Figures
	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. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.	Parabolas Quadratic Equations Quadratic Regression Models Reading Graphs Slope Slope-Intercept Form Solving Quadratic Equations Solving an Equation The Quadratic Formula Write Linear Equations using Slope & y-Intercepts Write Linear Equations using Two Points Write and Solve Equations
F-IF.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.	Domain and Range Parabolas Reading Graphs The Unit Circle
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.	Average Rate of Change Slope
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.	

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F-IF.7(a)	Graph linear and quadratic functions and show intercepts, maxima, and minima.	Parabolas Quadratic Equations Quadratic Functions Quadratic Regression Models Slope-Intercept Form Solving Quadratic Equations The Quadratic Formula Write Linear Equations using Slope & y-Intercepts
F-IF.7(b)	Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.	Reading Graphs
F-IF.7(d)	(+) Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.	Constant of Variation
F-IF.7(e)	Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.	Amplitude and Period Degree and Radian Measures The Sine Function Wavelength and Frequency
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(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.	Consecutive Growth and Decay Factors Equations of Exponential Functions Exponential Functions Growth and Decay Factors Population Growth Use Exponential Functions
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.	

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F-BF.1(a)	Determine an explicit expression, a recursive process, or steps for calculation from a context.	Constant of Variation Domain and Range Equations of Exponential Functions Expressions and Formulas Inverse Variation Problem-Solving Slope-Intercept Form Write Linear Equations using Slope & y-Intercepts Write Linear Equations using Two Points
	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. Include recognizing even and odd functions from their graphs and algebraic expressions for them.	Amplitude and Period Quadratic Equations Quadratic Functions
F-LE.	Linear and Exponential Models	
	Construct and compare linear and exponential models and solve problems.	
F-LE.1.	Distinguish between situations that can be modeled with linear functions and with exponential functions.	

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F-LE.1(a)	Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.	Break-Even Points Consecutive Growth and Decay Factors Direct Variation Equations of Exponential Functions Exponential Functions Growth and Decay Factors Mathematical Modeling Population Growth Slope Slope-Intercept Form Systems of Equations Use Exponential Functions Write Linear Equations using Slope & y-Intercepts Write Linear Equations using Two Points
F-LE.1(c)	Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.	Consecutive Growth and Decay Factors Equations of Exponential Functions Exponential Functions Growth and Decay Factors Population Growth Use Exponential Functions
F-LE.2.	Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).	Equations of Exponential Functions Slope-Intercept Form Write Linear Equations using Slope & y-Intercepts Write Linear Equations using Two Points
F-LE.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.	Equations of Exponential Functions
	Interpret expressions for functions in terms of the situation they model.	

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F-LE.5.	Interpret the parameters in a linear or exponential function in terms of a context.	Quadratic Equations Reading Graphs Slope Write Linear Equations using Slope & y-Intercepts
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.	Degree and Radian Measures
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
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, cosines, and tangent for x, pi + x, and 2pi - x in terms of their values for x, where x is any real number.	Amplitude and Period Angle Relationships Degree and Radian Measures Direct Variation Inverse Functions Right Triangles The Unit Circle Wavelength and Frequency
F-TF.4.	(+) Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.	The Unit Circle
	Model periodic phenomena with trigonometric functions.	
F-TF.5.	Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.	Amplitude and Period Wavelength and Frequency
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.	Inverse Functions

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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.	Inverse Functions
WA.G.	Geometry	
G-CO.	Congruence	
	Experiment with transformations in the plane	
G-CO.2.	Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).	Tessellations
G-CO.3.	Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.	Tessellations
G-CO.4.	Develop definitions of rotations, reflections and translations in terms of angles, circles, perpendicular lines, parallel lines and line segments.	Tessellations
G-CO.5.	Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.	Tessellations
	Understand congruence in terms of rigid motions	
G-CO.6.	Use geometric descriptions of rigid motions to transform figures and to predict the effect of a rigid motion on a figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.	Tessellations
G-CO.7.	Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.	Tessellations
G-SRT.	Similarity, Right Triangles, and Trigonometry	
	Understand similarity in terms of similarity transformations	

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G-SRT.1.	Verify experimentally the properties of dilations:	
G-SRT.2.	Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.	Similar Triangles
	Prove theorems involving similarity	
G-SRT.5.	Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.	Similar Triangles
	Define trigonometric ratios and solve problems involving right triangles	
G-SRT.6.	Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.	Angle Relationships Right Triangles
G-SRT.7.	Explain and use the relationship between the sine and cosine of complementary angles.	Amplitude and Period Angle Relationships Degree and Radian Measures Direct Variation Inverse Functions Right Triangles The Unit Circle Wavelength and Frequency
G-SRT.8.	Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.	Angle Relationships Area and Perimeter in Context Right Triangles
G-C.	Circles	
	Understand and apply theorems about circles	
G-C.2.	Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.	The Unit Circle

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	Find arc lengths and areas of sectors of circles	
G-C.5.	Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.	Area Degree and Radian Measures
G-GMD.	Geometric Measurement and Dimension	
	Explain volume formulas and use them to solve problems	
G-GMD.1.	Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. Use dissection arguments, Cavalieri's principle, and informal limit arguments.	Area
G-GMD.3.	Use volume formulas for cylinders, pyramids, cones and spheres to solve problems.	Volume of Prisms and Cylinders Volume of Spheres and Cones
WA.S.	Statistics and Probability	
S-ID.	Interpreting Categorical and Quantitative Data	
	Summarize, represent, and interpret data on a single count or measurement variable	
S-ID.1.	Represent data with plots on the real number line (dot plots, histograms, and box plots).	Data Distribution
S-ID.2.	Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.	Variability
	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.	Data Distribution Organizing Data Probability Understand Functions
S-ID.6.	Represent data on two quantitative variables on a scatter plot and describe how the variables are related.	

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S-ID.6(a)	Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.	Equations of Exponential Functions Quadratic Regression Models The Sine Function
S-ID.6(b)	Informally assess the fit of a model function by plotting and analyzing residuals.	Organizing Data
S-IC.	Making Inferences and Justifying Conclusions	
	Understand and evaluate random processes underlying statistical experiments	
S-IC.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?	Probability
	Make inferences and justify conclusions from sample surveys, experiments and observational studies	
S-IC.5.	Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.	Probability Sample Space
S-CP.	Conditional Probability and the Rules of Probability	
	Understand independence and conditional probability and use them to interpret data	
S-CP.4.	Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.	Data Distribution
	Use the rules of probability to compute probabilities of compound events in a uniform probability model	
S-CP.6.	Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A and interpret the answer in terms of the model.	Binomial Probability

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S-CP.9.	(+) Use permutations and combinations to compute probabilities of compound events and solve problems.	Permutations and Combinations
S-MD.	Using Probability to Make Decisions	
	Calculate expected values and use them to solve problems	
S-MD.1.	(+) Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample space; graph the corresponding probability distribution using the same graphical displays as for data distributions.	Sample Space
S-MD.2.	(+) Calculate the expected value of a random variable; interpret it as the mean of the probability distribution.	Sample Space
S-MD.3.	(+) Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value. For example, find the theoretical probability distribution for the number of correct answers obtained by guessing on all five questions of multiple-choice test where each question has four choices, and find the expected grade under various grading schemes.	Sample Space
S-MD.4.	(+) Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value. For example, find a current data distribution on the number of TV sets per household in the United States and calculate the expected number of sets per household. How many TV sets would you expect to find in 100 randomly selected households?	Sample Space