Standard ID	Standard Text	Edgenuity Lesson Name
AII.1.	Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	
AII.1 (A)	Apply mathematics to problems arising in everyday life, society, and the workplace.	Modeling with Exponential and Logarithmic Equations Modeling with Matrices Modeling with Rational Functions Radical Equations and Extraneous Roots
AII.1 (B)	Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.	Modeling with Exponential and Logarithmic Equations Modeling with Linear Systems Modeling with Quadratic Equations Modeling with Rational Functions
AII.1 (C)	Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.	Matrices and Row Operations Modeling Functions Using Finite Differences Regression Models Synthetic Division and the Remainder Theorem
AII.1 (D)	Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.	Domain and Range Modeling with Rational Functions Recursive Formulas Transformations of Quadratic Functions
AII.1 (E)	Create and use representations to organize, record, and communicate mathematical ideas.	Absolute Value Functions Modeling with Functions Modeling with Systems

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AII.1 (E)	Create and use representations to organize, record, and communicate mathematical ideas. *(cont'd)*	Performance Task: Annual Salaries and Gender Quadratic in Form Polynomials Synthetic Division and the Remainder Theorem
AII.1 (F)	Analyze mathematical relationships to connect and communicate mathematical ideas.	Graphs of Rational Functions Operations with Complex Numbers Rational Exponents Solving Exponential and Logarithmic Equations
AII.1 (G)	Display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	Adding and Subtracting Radicals Modeling with Functions Multiplication of Polynomials
AII.2.	Attributes of functions and their inverses. The student applies mathematical processes to understand that functions have distinct key attributes and understand the relationship between a function and its inverse. The student is expected to:	
AII.2 (A)	Graph the functions $f(x)=\sqrt{x}$, $f(x)=1/x$, $f(x)=x^3$, $f(x)=$ cube root of x, $f(x)=b^x$, $f(x)=|x|$, and $f(x)=$log base b of (x) where b is 2, 10, and e, and, when applicable, analyze the key attributes such as domain, range, intercepts, symmetries, asymptotic behavior, and maximum and minimum given an interval.	Absolute Value Functions and Translations Base e Graphing Exponential Functions Graphing Logarithmic Functions Graphing Radical Functions Graphing Rational Functions Performance Task: Roller Coaster Design Reflections and Dilations of Absolute Value Functions Square Root Functions The Cube Root Function The Cubing Function

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AII.2 (B)	Graph and write the inverse of a function using notation such as f ^-1 (x).	
		Function Inverses
		Graphing Logarithmic Functions
		Square Root Functions
AII.2 (C)	Describe and analyze the relationship between a function and its inverse (quadratic and square root, logarithmic and exponential), including the restriction(s) on domain, which will restrict its range.	
		Comparing a Function and Its Inverse
		Function Inverses
		Graphing Logarithmic Functions
		Square Root Functions
AII.2 (D)	Use the composition of two functions, including the necessary restrictions on the domain, to determine if the functions are inverses of each other.	
		Composition of Functions
AII.3.	Systems of equations and inequalities. The student applies mathematical processes to formulate systems of equations and inequalities, use a variety of methods to solve, and analyze reasonableness of solutions. The student is expected to:	
AII.3 (A)	Formulate systems of equations, including systems consisting of three linear equations in three variables and systems consisting of two equations, the first linear and the second quadratic.	
		Modeling with Systems
AII.3 (B)	Solve systems of three linear equations in three variables by using Gaussian elimination, technology with matrices, and substitution.	
		Matrices and Row Operations
		Modeling with Matrices
		Solving 3 x 3 Linear Systems
AII.3 (C)	Solve, algebraically, systems of two equations in two variables consisting of a linear equation and a quadratic equation.	
		Mixed Degree Systems
AII.3 (D)	Determine the reasonableness of solutions to systems of a linear equation and a quadratic equation in two variables.	
		Mixed Degree Systems
AII.3 (E)	Formulate systems of at least two linear inequalities in two variables.	
		Modeling with Linear Systems
AII.3 (F)	Solve systems of two or more linear inequalities in two variables.	
		Solving Linear Systems Graphically

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AII.3 (G)	Determine possible solutions in the solution set of systems of two or more linear inequalities in two variables.	Solving Linear Systems Graphically
AII.4.	Quadratic and square root functions, equations, and inequalities. The student applies mathematical processes to understand that quadratic and square root functions, equations, and quadratic inequalities can be used to model situations, solve problems, and make predictions. The student is expected to:	
AII.4 (A)	Write the quadratic function given three specified points in the plane.	Modeling with Quadratic Equations
AII.4 (B)	Write the equation of a parabola using given attributes, including vertex, focus, directrix, axis of symmetry, and direction of opening.	Conic Sections: Parabolas
AII.4 (C)	Determine the effect on the graph of $f(x)= \sqrt{x}$ when $f(x)$ is replaced by $af(x)$, $f(x)+ d$, $f(bx)$, and $f(x - c)$	Graphing Radical Functions Square Root Functions
AII.4 (D)	Transform a quadratic function $f(x)= ax^2 + bx + c$ to the form $f(x)= a(x - h)^2 + k$ to identify the different attributes of $f(x)$.	Transformations of Quadratic Functions
AII.4 (E)	Formulate quadratic and square root equations using technology given a table of data.	Regression Models
AII.4 (F)	Solve quadratic and square root equations.	Completing the Square Radical Equations and Extraneous Roots Solving Quadratic Equations by Factoring The Quadratic Formula
AII.4 (G)	Identify extraneous solutions of square root equations.	Performance Task: Roller Coaster Design Radical Equations and Extraneous Roots
AII.4 (H)	Solve quadratic inequalities.	Quadratic Inequalities
AII.5.	Exponential and logarithmic functions and equations. The student applies mathematical processes to understand that exponential and logarithmic functions can be used to model situations and solve problems. The student is expected to:	
AII.5 (A)	Determine the effects on the key attributes on the graphs of $f(x)= b^x$ and $f(x)= \log_b x$ where b is 2, 10, and e when $f(x)$ is replaced by $af(x)$, $f(x)+ d$, and $f(x - c)$ for specific positive and negative real values of a, c, and d.	Graphing Exponential Functions Graphing Logarithmic Functions

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AII.5 (B)	Formulate exponential and logarithmic equations that model real-world situations, including exponential relationships written in recursive notation.	Modeling with Exponential and Logarithmic Equations Recursive Formulas
AII.5 (C)	Rewrite exponential equations as their corresponding logarithmic equations and logarithmic equations as their corresponding exponential equations.	Evaluating Logarithmic Expressions Graphing Logarithmic Functions
AII.5 (D)	Solve exponential equations of the form $y = ab^x$ where a is a nonzero real number and b is greater than zero and not equal to one and single logarithmic equations having real solutions.	Properties of Logarithms Solving Equations using Properties of Logarithms Solving Exponential and Logarithmic Equations Solving Exponential Equations by Rewriting the Base Solving Logarithmic Equations using Technology
AII.5 (E)	Determine the reasonableness of a solution to a logarithmic equation.	Solving Equations using Properties of Logarithms Solving Logarithmic Equations using Technology
AII.6.	Cubic, cube root, absolute value and rational functions, equations, and inequalities. The student applies mathematical processes to understand that cubic, cube root, absolute value and rational functions, equations, and inequalities can be used to model situations, solve problems, and make predictions. The student is expected to:	
AII.6 (A)	Analyze the effect on the graphs of $f(x)= x^3$ and $f(x)=$ cube root of x when $f(x)$ is replaced by $af(x)$, $f(bx)$, $f(x - c)$, and $f(x)+ d$ for specific positive and negative real values of a, b, c, and d.	Graphing Radical Functions The Cubing Function

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AII.6 (B)	Solve cube root equations that have real roots.	
		Radical Equations and Extraneous Roots
		Solving Equations Containing Two Radicals
AII.6 (C)	Analyze the effect on the graphs of f(x)= |x| when f(x)is replaced by af(x), f(bx), f(x-c), and f(x)+ d for specific positive and negative real values of a, b, c, and d.	
		Absolute Value Functions and Translations
		Reflections and Dilations of Absolute Value Functions
AII.6 (D)	Formulate absolute value linear equations.	
		Absolute Value Functions
		Solving Absolute Value Equations
AII.6 (E)	Solve absolute value linear equations.	
		Solving Absolute Value Equations
AII.6 (F)	Solve absolute value linear inequalities.	
		Absolute Value Inequalities
AII.6 (G)	Analyze the effect on the graphs of f(x)= 1/x when f(x)is replaced by af(x), f(bx), f(x-c), and f(x)+ d for specific positive and negative real values of a, b, c, and d.	
		Graphs of Rational Functions
AII.6 (H)	Formulate rational equations that model real-world situations.	
		Modeling with Rational Functions
AII.6 (I)	Solve rational equations that have real solutions.	
		Modeling with Rational Functions
		Rational Equations
AII.6 (J)	Determine the reasonableness of a solution to a rational equation.	
		Rational Equations
AII.6 (K)	Determine the asymptotic restrictions on the domain of a rational function and represent domain and range using interval notation, inequalities, and set notation.	
		Vertical Asymptotes of Rational Functions
AII.6 (L)	Formulate and solve equations involving inverse variation.	
		Vertical Asymptotes of Rational Functions
AII.7.	Number and algebraic methods. The student applies mathematical processes to simplify and perform operations on expressions and to solve equations. The student is expected to:	
AII.7 (A)	Add, subtract, and multiply complex numbers.	
		Operations with Complex Numbers

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AII.7 (B)	Add, subtract, and multiply polynomials.	
		Addition and Subtraction of Polynomials
		Multiplication of Polynomials
AII.7 (C)	Determine the quotient of a polynomial of degree three and of degree four when divided by a polynomial of degree one and of degree two.	
		Division of Polynomials
AII.7 (D)	Determine the linear factors of a polynomial function of degree three and of degree four using algebraic methods.	
		Factoring Polynomials Completely
		Synthetic Division and the Remainder Theorem
		The Fundamental Theorem of Algebra
AII.7 (E)	Determine linear and quadratic factors of a polynomial expression of degree three and of degree four, including factoring the sum and difference of two cubes and factoring by grouping.	
		Factoring Polynomials Completely
		Factoring Polynomials: Double Grouping
		Quadratic in Form Polynomials
		Sum and Difference of Two Cubes
		Synthetic Division and the Remainder Theorem
		The Fundamental Theorem of Algebra
AII.7 (F)	Determine the sum, difference, product, and quotient of rational expressions with integral exponents of degree one and of degree two.	
		Adding and Subtracting Rational Expressions
		Multiplying and Dividing Rational Expressions
AII.7 (G)	Rewrite radical expressions that contain variables to equivalent forms.	
		Adding and Subtracting Radicals
		Dividing Radicals
		Multiplying Radicals
		Rational Exponents
		Simplifying Nonperfect Roots
		Simplifying Perfect Roots

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AII.7 (H)	Solve equations involving rational exponents.	
		Performance Task: Roller Coaster Design
		Radical Equations and Extraneous Roots
		Solving Equations Containing Two Radicals
AII.7 (I)	Write the domain and range of a function in interval notation, inequalities, and set notation.	
		Domain and Range
AII.8.	Data. The student applies mathematical processes to analyze data, select appropriate models, write corresponding functions, and make predictions. The student is expected to:	
AII.8 (A)	Analyze data to select the appropriate model from among linear, quadratic, and exponential models.	
		Modeling Functions Using Finite Differences
		Modeling with Functions
AII.8 (B)	Use regression methods available through technology to write a linear function, a quadratic function, and an exponential function from a given set of data.	
		Performance Task: Annual Salaries and Gender
		Regression Models
		Scatterplots
AII.8 (C)	Predict and make decisions and critical judgments from a given set of data using linear, quadratic, and exponential models.	
		Regression Models
		Scatterplots