Algebra I 4th Nine Weeks: Scope and Sequence

Content Standards	Dates Taught	% of Students scoring over 70%	Dates Re-taught (Optional)	Formative and Summative Assessments/ (Any Additional Comments Optional)
(10) 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. [A-APR1]	3/17-20	80%		Mid-chapter Quiz 8-1 - 8-4
(11) (+) 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. [A-APR7]				
(7, 7a, 7b) Interpret expressions that represent a quantity in terms of its context.* [A-SSE1] Interpret parts of an expression such as terms, factors, and coefficients. [A-SSE1a] Interpret complicated expressions by viewing one or more of their parts as a single entity. [A-SSE1b]				
(8) Use the structure of an expression to identify ways to rewrite it. [A-SSE2]				
(28) 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 for increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.** [F-IF4]				
(29) Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.* [F-IF5]				
(33) Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.* [F-IF7]				
(32, 32a, 32b) Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. [F-IF8] 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. [F-IF8a] Use the properties of exponents to interpret expressions for exponential functions. [F-IF8b]				
(18, 18a, 18b) Solve quadratic equations in one variable. [A-REI4] 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. [A-REI4a] Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square and the quadratic formula, and factoring as appropriate to the initial form of the equation. [A-REI4b] (Alabama)				

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(5) Define appropriate quantities for the purpose of descriptive modeling. [N-Q2]				
(12) 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.* [A-CED1]				
(15) Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. [A-CED4]				
(9, 9a, 9c) Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.* [A-SSE3] Factor a quadratic expression to reveal the zeros of the function it defines. [A-SSE3a] Determine a quadratic equation when given its graph or roots. (Alabama)				
(16) 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-REI1]				
(45, 45a) Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. [S-ID6] 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.* [S-ID6a]				
(39) Observe, using graphs and tables, that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function. [F-LE3]				
(21) Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. [A-REI7]				
(14) Represent constraints by equations or inequalities, and by systems of equations and/or inequalities and interpret solutions as viable or non-viable options in a modeling context. [A-CED3]				
(23) 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.* [A-REI11]				
(17) Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. [A-REI3]				
(12) 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.* [A-CED1]				

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(1) Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. [N-RN1]				
(2) Rewrite expressions involving radicals and rational exponents using the properties of exponents. [N-RN2]				
(27) Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. [F-IF3]				
(35) Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.* [F-BF2]				
(37, 37c) Distinguish between situations that can be modeled with linear functions and with exponential functions. [F-LE1] Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another. [F-LE1c]				
(40) Interpret the parameters in a linear or exponential function in terms of a context. [F-LE5]				
(13) Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. [A-CED2]				