Pre-AP Algebra I Grade 8
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)
Algebra (Algebra I Course of Study)				
18. Solve quadratic equations in one variable. [A-REI4] b. 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**)				
Geometry				
21. Explain a proof of the Pythagorean Theorem and its converse. [8-G6]				
23. Apply the Pythagorean Theorem to find the distance between two points in a coordinate system. [8-G8]				
22. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. [8-G7]				
Number and Quantity (Algebra I Course of Study)				
2. Rewrite expressions involving radicals and rational exponents using the properties of exponents. [N-RN2]				
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] Example: We define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3 = 5^{(1/3)3}$ to hold, so $(5^{1/3})^3$ must equal 5.				

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30. 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.* [F-IF6]				
31. 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] a.				

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Functions (Algebra I Course of Study)				
29. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.* [F-IF5] **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.				
34. Write a function that describes a relationship between two quantities.* [F-BF1]				

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Content Standards

	Dates Taught	% of Students scoring over 70%	Dates Re-taught (Optional)	Formative and Summative

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Algebra (Algebra I Course of Study)				
21. Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. [A-REI7] **Example:** Find the points of intersection between the line $y = -3x$ and the circle $x^2 + y^2 = 3$.				
Functions (Algebra I Course of Study)				
33. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). [F-IF9] **Example:** Given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.				

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