Oklahoma Algebra 2 Standards Correlated to Amsco Algebra 2 Lessons		Amsco Lesson
A2.N.1 Extend the understanding of number and operations to include complex numbers, matrices, radical expressions, and expressions written with rational exponents.	**A2.N.1.2** Simplify, add, subtract, multiply, and divide complex numbers.	2.5
	A2.N.1.3 Use matrices to organize and represent data. Identify the order (dimension) of a matrix, add and subtract matrices of appropriate dimensions, and multiply a matrix by a scalar to create a new matrix to solve problems.	Covered in Amsco Pre-Calculus
	A2.N.1.4 Understand and apply the relationship of rational exponents to integer exponents and radicals to solve problems.	5.3
A2.A.1 Represent and solve mathematical and real-world problems using nonlinear equations and systems of linear equations; interpret the solutions in the original context	**A2.A.1.1** Represent real-world or mathematical problems using quadratic equations and solve using various methods (including graphing calculator or other appropriate technology), factoring, completing the square, and the quadratic formula. Find non-real roots when they exist.	2.3, 2.4, 2.5 ,2.6, 2.7
	A2.A.1.2 Represent real-world or mathematical problems using exponential equations, such as compound interest, depreciation, and population growth, and solve these equations graphically (including graphing calculator or other appropriate technology) or algebraically.	6.1, 6.2
	A2.A.1.3 Solve one-variable rational equations and check for extraneous solutions.	4.3
	A2.A.1.4 Solve polynomial equations with real roots using various methods and tools that may include factoring, polynomial division, synthetic division, graphing calculators or other appropriate technology.	3.2, 3.3, 3.4, 3.5, 3.6, 3.8, 3.9
	A2.A.1.5 Solve square root equations with one variable and check for extraneous solutions.	5.4
	A2.A.1.6 Solve common and natural logarithmic equations using the properties of logarithms.	7.1, 7.2, 7.3, 7.4, 7.5, 7.6
	A2.A.1.7 Solve real-world and mathematical problems that can be modeled using arithmetic or finite geometric sequences or series given the !th terms and sum formulas. Graphing calculators or other appropriate technology may be used.	8.1, 8.2, 8.3, 8.4, 8.5
	A2.A.1.8 Represent real-world or mathematical problems using systems of linear equations with a maximum of three variables and solve using various methods that may include substitution, elimination, and graphing (may include graphing calculators or other appropriate technology).	R.4, 1.3, 1.4
	A2.A.1.9 Solve systems of equations containing one linear equation and one quadratic equation using tools that may include graphing calculators or other appropriate technology.	3.9

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A2.A.2 Represent and analyze mathematical situations and structures using algebraic symbols using various strategies to write equivalent forms of expressions.	**A2.A.2.1** Factor polynomial expressions including but not limited to trinomials, differences of squares, sum and difference of cubes, and factoring by grouping using a variety of tools and strategies.	2.1, 2.2, 2.3, 3.2, 3.4, 3.5
	A2.A.2.2 Add, subtract, multiply, divide, and simplify polynomial and rational expressions.	4.1, 4.3, 4.3
	A2.A.2.3 Recognize that a quadratic function has different equivalent representations [f(x) = ax^2 + bx + c, = a(x − h)^2 + k, and f(x) = (x − h)(x −k)]. Identify and use the representation that is most appropriate to solve real-world and mathematical problems	2.1, 2.2, 2.3, 2.4, 2.6, 2.7
	A2.A.2.4 Rewrite expressions involving radicals and rational exponents using the properties of exponents.	5.1, 5.2, 5.3
A2.F.1 Understand functions as descriptions of covariation (how related quantities vary together).	**A2.F.1.1** Use algebraic, interval, and set notations to specify the domain and range of functions of various types and evaluate a function at a given point in its domain.	R.3, 1.1, 6.3, 6.4
	A2.F.1.2 Recognize the graphs of exponential, radical (square root and cube root only), quadratic, and logarithmic functions. Predict the effects of transformations [*f(x + c), f(x) + c, f(cx),* and *cf(x)*, where *c* is a positive or negative real-valued constant] algebraically and graphically, using various methods and tools that may include graphing calculators or other appropriate technology.	1.1, 2.8, 5.5, 6.1, 7.2
	A2.F.1.3 Graph a quadratic function. Identify the *x*- and *y*-intercepts, maximum or minimum value, axis of symmetry, and vertex using various methods and tools that may include a graphing calculator or appropriate technology.	2.6, 2.7, 2.8
	A2.F.1.4 Graph exponential and logarithmic functions. Identify asymptotes and *x*- and *y*-intercepts using various methods and tools that may include graphing calculators or other appropriate technology. Recognize exponential decay and growth graphically and algebraically.	6.1, 7.2
	A2.F.1.5 Analyze the graph of a polynomial function by identifying the domain, range, intercepts, zeros, relative maxima, relative minima, and intervals of increase and decrease.	3.5, 3.7, 3.8, 3.9
	A2.F.1.6 Graph a rational function and identify the *x*- and *y*-intercepts, vertical and horizontal asymptotes, using various methods and tools that may include a graphing calculator or other appropriate technology. (Excluding slant or oblique asymptotes and holes.)	4.4
	A2.F.1.7 Graph a radical function (square root and cube root only) and identify the *x*- and *y*-intercepts using various methods and tools that may include a graphing calculator or other appropriate technology.	5.5
	A2.F.1.8 Graph piecewise functions with no more than three branches (including linear, quadratic, or exponential branches) and analyze the function by identifying the domain, range, intercepts, and intervals for which it is increasing, decreasing, and constant.	1.1

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A2.F.2 Analyze functions through algebraic combinations, compositions, and inverses, if they exist.	**A2.F.2.1** Add subtract, multiply, and divide functions using function notation and recognize domain restrictions.	6.3, 6.4
	A2.F.2.2 Combine functions by composition and recognize that $g(x) = f^{-1}(x)$, the inverse function of $f(x)$, if and only if $f(g(x)) = g(f(x)) = x$.	6.3, 6.4
	A2.F.2.3 Find and graph the inverse of a function, if it exists, in real-world and mathematical situations. Know that the domain of a function f is the range of the inverse function f^{-1}, and the range of the function f is the domain of the inverse function f^{-1}.	6.4
	A2.F.2.4 Apply the inverse relationship between exponential and logarithmic functions to convert from one form to another.	7.1
A2.D.1 Display, describe, and compare data. For linear and nonlinear relationships, make predictions and assess the reliability of those predictions.	**A2.D.1.1** Use the mean and standard deviation of a data set to fit it to a normal distribution (bell-shaped curve).	10.5
	A2.D.1.2 Collect data and use scatterplots to analyze patterns and describe linear, exponential or quadratic relationships between two variables. Using graphing calculators or other appropriate technology, determine regression equation and correlation coefficients; use regression equations to make predictions and correlation coefficients to assess the reliability of those predictions.	1.2, 2.7, 6.2
	A2.D.1.3 Based upon a real-world context, recognize whether a discrete or continuous graphical representation is appropriate and then create the graph.	1.1, 1.2, 1.3
A2.D.2 Analyze statistical thinking to draw inferences, make predictions, and justify conclusions.	**A2.D.2.1** Evaluate reports based on data published in the media by identifying the source of the data, the design of the study, and the way the data are analyzed and displayed. Given spreadsheets, tables, or graphs, recognize and analyze distortions in data displays. Show how graphs and data can be distorted to support different points of view.	10.7
	A2.D.2.2 Identify and explain misleading uses of data. Recognize when arguments based on data confuse correlation and causation.	Covered in Amsco Algebra 1.

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