

Alignment Document

State of Louisiana And Aventa Learning Algebra 2

Algebra 2 2005-2007 Benchmark Blueprint

State Standard Number	State Standard Area / Description	Unit Name	Course Topic Description
0	Number and Number Relations		
1	Read, write, and perform basic operations on complex numbers	Complex Numbers	Working with complex numbers
		Complex Numbers	Addition and Subtraction in a Complex Plane
		Complex Numbers	Absolute Value of a Complex Number
2	Evaluate and perform basic operations on expressions containing rational exponents	Exponential and Logarithmic Functions	An example
3	Describe the relationship between exponential and logarithmic equations	Exponential and Logarithmic Functions	Logarithmic functions and exponential functions together
		Exponential and Logarithmic Functions	The horizontal line property, and one-to-one functions
0	Algebra		
4	Translate and show the relationships among non-linear graphs, related tables of values, and algebraic symbolic representations	Conic Sections	General equation for conic sections
5	Factor simple quadratic expressions including general trinomials, perfect squares, difference of two squares, and polynomials with common factors	Quadratics	Factored form of quadratics
		Polynomials	The Factor Theorem
		Polynomials	Factoring Polynomials
6	Analyze functions based on zeros, asymptotes, and local and global characteristics of the function	Quadratics	Zeros of the quadratic function

7	Explain, using technology, how the graph of a function is affected by change of degree, coefficient, and constants in polynomial, rational, radical, exponential, and logarithmic functions	Exponential and Logarithmic Functions	Introduction
		Exponential and Logarithmic Functions	Computations with exponential functions
		Exponential and Logarithmic Functions	Exponential functions: an example
		Exponential and Logarithmic Functions	Graphs of exponential functions
		Exponential and Logarithmic Functions	Exponential functions: an intuitive approach
		Exponential and Logarithmic Functions	Exponential functions: the formal definition
		Polynomials	Introduction
8	Categorize non-linear graphs and their equations as quadratic, cubic, exponential, logarithmic, step function, rational, trigonometric, or absolute value	Exponential and Logarithmic Functions	The horizontal line property, and one-to-one functions
		Exponential and Logarithmic Functions	Exponential functions: the formal definition
		Exponential and Logarithmic Functions	Introduction
		Exponential and Logarithmic Functions	Computations with exponential functions
		Exponential and Logarithmic Functions	Graphs of exponential functions
		Exponential and Logarithmic Functions	Graphs of logarithm functions
		Quadratics	Quadratic functions and their graphs
		Quadratics	From the zeros to the equation of quadratic functions
		Quadratics	Zeros of the quadratic function
		Quadratics	Introduction
		Quadratics	Factored form of quadratics
9	Solve quadratic equations by factoring, completing the square, using the quadratic formula, and graphing	Quadratics	Completing the Square
		Quadratics	The Quadratic Formula
		Quadratics	Developing the Quadratic Formula

10	Model and solve problems involving quadratic, polynomial, exponential, logarithmic, step function, rational, and absolute value equations using technology	Absolute Value	Absolute Value equations in other places
		Absolute Value	More Complicated Absolute Value Equations
		Exponential and Logarithmic Functions	Graphs of logarithm functions
		Exponential and Logarithmic Functions	More Real Life Logarithmic Examples
		Quadratics	Quadratic functions in the real world
0	Measurement		
11	Calculate angle measures in degrees, minutes, and seconds		
12	Explain the unit circle basis for radian measure and show its relationship to degree measure of angles		
13	Identify and apply the unit circle definition to trigonometric functions and use this definition to solve real-life problems		
14	Use the Law of Sines and the Law of Cosines to solve problems involving triangle measurements		
0	Geometry		
15	Identify conic sections, including the degenerate conics, and describe the relationship of the plane and double-napped cone that forms each conic	Conic Sections	Introduction
		Conic Sections	General equation for conic sections.
		Conic Sections	What kind of conic is it?
16	Represent translations, reflections, rotations, and dilations of plane figures using sketches, coordinates, vectors, and matrices		
0	Data Analysis, Probability, and Discrete Math		
17	Discuss the differences between samples and populations		
18	Devise and conduct well-designed experiments/surveys involving randomization and considering the effects of sample size and bias		

19	Correlate/match data sets or graphs and their representations and classify them as exponential, logarithmic, or polynomial functions	Exponential and Logarithmic Functions	Exponential functions: an intuitive approach
		Exponential and Logarithmic Functions	Graphs of exponential functions
20	Interpret and explain, with the use of technology, the regression coefficient and the correlation coefficient for a set of data		
21	Describe and interpret displays of normal and non-normal distributions		
22	Explain the limitations of predictions based on organized sample sets of data		
23	Represent data and solve problems involving Euler and Hamiltonian paths		
0	Patterns, Relations, and Functions		
24	Model a given set of real-life data with a non-linear function	Quadratics	Graphing parabolas
25	Apply the concept of a function and function notation to represent and evaluate functions	Composition of Functions	Function Notation
		Composition of Functions	Checking that two functions really are inverse functions of each other
26	Represent and solve problems involving n th terms and sums for arithmetic and geometric series	Sequences and Series	Arithmetic Series
		Sequences and Series	Geometric Series
27	Compare and contrast the properties of families of polynomial, rational, exponential, and logarithmic functions, with and without technology	Exponential and Logarithmic Functions	Introduction
		Exponential and Logarithmic Functions	Exponential functions: an example
		Exponential and Logarithmic Functions	Graphs of exponential functions
		Exponential and Logarithmic Functions	Exponential functions: an intuitive approach
		Exponential and Logarithmic Functions	Exponential functions: the formal definition
28	Represent and solve problems involving the translation of functions in the coordinate plane		
29	Determine the family or families of functions that can be used to represent a given set of real-life data, with and without technology		