

Algebra 2

State Standard Number	State Standard Area/Description	Unit Name	Course Topic Description
3103.1	Mathematical Processes		
CLE 3103.1.1	Use mathematical language, symbols, definitions, proofs and counterexamples correctly and precisely in mathematical reasoning.	Dispersed throughout all units	
CLE 3103.1.2	Apply and adapt a variety of appropriate strategies to problem solving, including testing cases, estimation, and then checking induced errors and the reasonableness of the solution.		
CLE 3103.1.3	Develop inductive and deductive reasoning to independently make and evaluate mathematical arguments and construct appropriate proofs; include various types of reasoning, logic, and intuition.		
CLE 3103.1.4	Move flexibly between multiple representations (contextual, physical, written, verbal, iconic/pictorial, graphical, tabular, and symbolic), to solve problems, to model mathematical ideas, and to communicate solution strategies.	Dispersed throughout all units	
CLE 3103.1.5	Recognize and use mathematical ideas and processes that arise in different settings, with an emphasis on formulating a problem in mathematical terms, interpreting the solutions, mathematical ideas, and communication of solution strategies.	Dispersed throughout all units in real life problems and examples.	
CLE 3103.1.6	Employ reading and writing to recognize the major themes of mathematical processes, the historical development of mathematics, and the connections between mathematics and the real world.		
CLE 3103.1.7	Use technologies appropriately to develop understanding of abstract mathematical ideas, to facilitate problem solving, and to produce accurate and reliable models.	Linear and Quadratic Functions Radical Functions	Writing and Graphing Linear Functions; Graphing Zeros and Min/Max Values Solving Radical Equations and Inequalities

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		Rational Functions	Introduction; Graphing Rational Functions and Domain and Range
		Exponential and Logarithmic Functions	Graphing Exponential Functions and Domain and Range
3103.2	Number & Operations		
CLE 3103.2.1	Understand the hierarchy of the complex number system and relationships between the elements, properties and operations.	Linear and Quadratic Functions	Solving Quadratic Functions
CLE 3103.2.2	Connect numeric, analytic, graphical and verbal representations of both real and complex numbers.	Linear and Quadratic Functions	Functions and Relations
CLE 3103.2.3	Use appropriate technology (including graphing calculators and computer spreadsheets) to solve problems, recognize patterns and collect and analyze data.	Linear and Quadratic Functions	Writing and Graphing Linear Functions; Graphing Zeros and Min/Max Values
		Radical Functions	Solving Radical Equations and Inequalities
		Rational Functions	Introduction; Graphing Rational Functions and Domain and Range
CLE 3103.2.4	Understand the capabilities and limitations of technology when performing operations, graphing, and solving equations involving complex numbers.		
3103.3	Algebra		
CLE 3103.3.1	Understand and apply properties of rational exponents and perform basic operations to simplify algebraic expressions.	Linear and Quadratic Functions	Functions and Relations
		Radical Functions	Roots and Properties of Exponents
CLE 3103.3.2	Understand, analyze, transform and generalize mathematical patterns, relations and functions using properties and various representations.	Linear and Quadratic Functions	All Sections
		Discrete Mathematics	Arithmetic Sequences and Series; Geometric Sequences and Series

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CLE 3103.3.3	Analyze and apply various methods to solve equations, absolute values, inequalities, and systems of equations over complex numbers.	<p>Linear and Quadratic Functions</p> <p>Radical Functions</p> <p>Rational Functions</p> <p>Exponential and Logarithmic Functions</p> <p>Systems of Equations and Inequalities</p>	<p>All Sections</p> <p>Solving Radical Equations and Inequalities</p> <p>Direct and Inverse Variation; Solving Rational Equations and Inequalities</p> <p>Solving Exponential and Logarithmic Equations</p> <p>Systems of Equations; Systems of Equations with Three Variables</p>
CLE 3103.3.4	Graph and compare equations and inequalities in two variables. Identify and understand the relationships between the algebraic and geometric properties of the graph.	<p>Linear and Quadratic Functions</p> <p>Radical Functions</p> <p>Rational Functions</p> <p>Exponential and Logarithmic Functions</p> <p>Systems of Equations and Inequalities</p>	<p>All Sections</p> <p>Graphing Radical Functions and Domain and Range</p> <p>Direct and Inverse Variation; Graphing Rational Functions and Domain and Range</p> <p>Graphing Exponential Functions and Domain and Range; Exponential Growth and Decay; Graphing Logarithmic Functions and Domain and Range</p> <p>Systems of Linear Inequalities</p>
CLE 3103.3.5	Use mathematical models involving equations and systems of equations to represent, interpret and analyze quantitative relationships, change in various contexts, and other real-world phenomena.	Real world examples and mathematical models are dispersed throughout all units.	
3103.4	Geometry & Measurement		

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CLE 3103.4.1	Understand the trigonometric functions and their relationship to the unit circle.	Trigonometric Functions	Trigonometric Values in All Four Quadrants
CLE 3103.4.2	Know and use the basic identities of sine, cosine, and tangent as well as their reciprocals.	Trigonometric Functions	Right Triangle Trigonometry
CLE 3103.4.3	Graph all six trigonometric functions and identify their key characteristics.	Trigonometric Functions	Graphing Trigonometric Functions
CLE 3103.4.4	Know and use the Law of Sines to find missing sides and angles of a triangle, including the ambiguous case.		
CLE 3103.4.5	Use trigonometric concepts, properties and graphs to solve problems.	Trigonometric Functions	All Sections
3103.5	Data Analysis, Statistics, & Probability		
CLE 3103.5.1	Describe, interpret, and apply quantitative data.	Probability and Statistics	Statistics; Normal Distribution
CLE 3103.5.2	Evaluate and critique various ways of collecting data and using information based on data published in the media.	Probability and Statistics	Statistics
CLE 3103.5.3	Use data and statistical thinking to draw inferences, make predictions, justify conclusions and identify and explain misleading uses of data.	Probability and Statistics	Statistics; Normal Distribution
CLE 3103.5.4	Develop an understanding of probability concepts in order to make informed decisions.	Probability and Statistics	Introduction to Probability; Permutations and Combinations