

Algebra II CR

State Standard Number	State Standard Area/Description	Unit Name	Course Topic Description
All	Algebra II		
All.N	Number Sense and Operations		
All.N.1	Define complex numbers (e.g., $a + bi$) and operations on them, in particular, addition, subtraction, multiplication, and division. Relate the system of complex numbers to the systems of real and rational numbers.	Linear and Quadratic Functions	Section E
All.N.2	Simplify numerical expressions with powers and roots, including fractional and negative exponents.	Linear and Quadratic Functions	Section E
All.P	Patterns, Relations, and Algebra		
All.P.1	Describe, complete, extend, analyze, generalize, and create a wide variety of patterns, including iterative and recursive patterns such as Pascal's Triangle	Discrete Mathematics	Section A, B
All.P.2	Identify arithmetic and geometric sequences and finite arithmetic and geometric series. Use the properties of such sequences and series to solve problems, including finding the formula for the general term and the sum, recursively and explicitly.	Discrete Mathematics	Section A, B
All.P.3	Demonstrate an understanding of the binomial theorem and use it in the solution of problems.	Probability and Statistics	Section C
All.P.4	Demonstrate an understanding of the exponential and logarithmic functions.	Exponential and Logarithmic Functions	Section A
All.P.5	Perform operations on functions, including composition. Find inverses of functions.	Linear and Quadratic Functions	Section A

Algebra II CR

All.P.6	Given algebraic, numeric and/or graphical representations, recognize functions as polynomial, rational, logarithmic, or exponential.	Linear and Quadratic Functions Rational Functions Exponential and Logarithmic Functions	Section A Section A Section A
All.P.7	Find solutions to quadratic equations (with real coefficients and real or complex roots) and apply to the solutions of problems.	Linear and Quadratic Functions	Section E
All.P.8	Solve a variety of equations and inequalities using algebraic, graphical, and numerical methods, including the quadratic formula; use technology where appropriate. Include polynomial, exponential, and logarithmic functions; expressions involving the absolute values; and simple rational expressions.	Linear and Quadratic Functions Exponential and Logarithmic Functions	Sections B, C Section A
All.P.9	Use matrices to solve systems of linear equations. Apply to the solution of everyday problems.	Systems of Equations and Inequalities	Sections A, C
All.P.10	Use symbolic, numeric, and graphical methods to solve systems of equations and/or inequalities involving algebraic, exponential, and logarithmic expressions. Also use technology where appropriate. De-scribe the relationships among the methods.	Systems of Equations and Inequalities	Sections B, C
All.P.11	Solve everyday problems that can be modeled using polynomial, rational, exponential, logarithmic, and step functions, absolute values and square roots. Apply appropriate graphical, tabular, or symbolic methods to the solution. Include growth and decay; logistic growth; joint (e.g., $I = Prt$, $y = k(w \log 1 + w \log 2)$), and combined ($F = G(m \log 1 \times m \log 2)/d^2$) variation.	Rational Functions Exponential and Logarithmic Functions	Section B Sections A, C, E

Algebra II CR

All.P.12	Identify maximum and minimum values of functions in simple situations. Apply to the solution of problems.	Linear and Quadratic Functions	Section F
All.P.13	Describe the translations and scale changes of a given function $f(x)$ resulting from substitutions for the various parameters a , b , c , and d in $y = af(b(x + c/b)) + d$. In particular, describe the effect of such changes on polynomial, rational, exponential, and logarithmic functions.		
All.G	Geometry		
All.G.1	Define the sine, cosine, and tangent of an acute angle. Apply to the solution of problems.	Trigonometric Functions	Section A
All.G.2	Derive and apply basic trigonometric identities (e.g., $\sin^2 \theta + \cos^2 \theta = 1$, $\tan^2 \theta + 1 = \sec^2 \theta$) and the laws of sines and cosines.		
All.G.3	Relate geometric and algebraic representations of lines, simple curves, and conic sections.	Linear and Quadratic Functions Conic Sections	Section C Sections A, B, E

Algebra II CR

All.D	Data Analysis, Statistics, and Probability		
All.D.1	Select an appropriate graphical representation for a set of data and use appropriate statistics (e.g., quartile or percentile distribution) to communicate information about the data.		
All.D.2	Use combinatorics (e.g., "fundamental counting principle," permutations, and combinations) to solve problems, in particular, to compute probabilities of compound events. Use technology as appropriate.	Probability and Statistics	Sections A, B