

North Carolina State Core Curriculum
Standards adopted 2003
Algebra II

Strand	Reference	Description	Boardworks High School Algebra presentations
Number and Operations	1.01	Simplify and perform operations with rational exponents and logarithms (common and natural) to solve problems.	The laws of logarithms Solving equations involving logarithms Exponents laws Rational exponents
	1.02	Define and compute with complex numbers.	–
	1.03	Operate with algebraic expressions (polynomial, rational, complex fractions) to solve problems.	Operations with polynomials Dividing polynomials The factor theorem Simplifying rational functions Operations with algebraic fractions Improper fractions
	1.04	Operate with matrices to model and solve problems.	–
	1.05	Model and solve problems using direct, inverse, combined and joint variation.	Direct proportion Inverse proportion
	2.01	Use the composition and inverse of functions to model and solve problems; justify results.	Functions and relations Domain, range and composite functions Inverse functions
	2.02	Use quadratic functions and inequalities to model and solve problems; justify results. a. Solve using tables, graphs, and algebraic properties. b. Interpret the constants and coefficients in the context of the problem.	Factoring quadratic expressions Quadratic inequalities Quadratic equations and factoring Completing the square The quadratic formula Problems leading to quadratic equations Solving quadratic equations Graphs of quadratic functions

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2.03	Use exponential functions to model and solve problems; justify results. a. Solve using tables, graphs, and algebraic properties. b. Interpret the constants and coefficients in the context of the problem.	The laws of logarithms Solving equations involving logarithms Exponentials and logarithms Exponential growth and decay
2.04	Create and use best-fit mathematical models of linear, exponential, and quadratic functions to solve problems involving sets of data. a. Interpret the constants, coefficients, and bases in the context of the data. b. Check the model for goodness-of-fit and use the model, where appropriate, to draw conclusions or make predictions.	Non-linear relationships Measuring correlation Scatter plots Lines of best fit
2.05	Use rational equations to model and solve problems; justify results. a. Solve using tables, graphs, and algebraic properties. b. Interpret the constants and coefficients in the context of the problem. c. Identify the asymptotes and intercepts graphically and algebraically.	Simplifying rational functions Operations with algebraic fractions Improper fractions
2.06	Use cubic equations to model and solve problems. a. Solve using tables and graphs. b. Interpret constants and coefficients in the context of the problem.	Non-linear functions Graphs of important non-linear functions Plotting and sketching graphs
2.07	Use equations with radical expressions to model and solve problems; justify results. a. Solve using tables, graphs, and algebraic properties. b. Interpret the degree, constants, and coefficients in the context of the problem.	Exponents and roots Manipulating radicals Plotting and sketching graphs

2.08	<p>Use equations and inequalities with absolute value to model and solve problems; justify results.</p> <p>a. Solve using tables, graphs, and algebraic properties.</p> <p>b. Interpret the constants and coefficients in the context of the problem.</p>	Absolute value functions
2.09	<p>Use the equations of parabolas and circles to model and solve problems; justify results.</p> <p>a. Solve using tables, graphs, and algebraic properties.</p> <p>b. Interpret the constants and coefficients in the context of the problem.</p>	<p>Solving quadratic equations</p> <p>Graphs of quadratic functions</p> <p>Coordinate geometry</p> <p>The equation of a circle</p>
2.10	<p>Use systems of two or more equations or inequalities to model and solve problems; justify results. Solve using tables, graphs, matrix operations, and algebraic properties.</p>	<p>Inequalities in two variables</p> <p>Systems of equations and graphs</p> <p>The elimination method for systems of equations</p> <p>The substitution method for systems of equations</p> <p>Systems of linear and quadratic equations</p> <p>Problems leading to systems of equations</p> <p>One linear and one quadratic equation</p>