

Wisconsin State Core Curriculum
Standards adopted 1998
Algebra

Strand	Description	Boardworks High School Algebra presentations
	B.12.1 Use complex counting procedures such as union and intersection of sets and arrangements (permutations and combinations)	Permutations Combinations
	B.12.2 Compare real numbers using order relations ($>$, $<$) and transitivity, ordinal scales including logarithmic (e.g., Richter, pH rating), arithmetic differences, ratios, proportions, percents, rates of change	The laws of logarithms Solving equations involving logarithms Exponentials and logarithms Exponential growth and decay Classifying numbers Calculating with integers Fractions, decimals and percentages Percentages of quantities Finding a percentage change Increasing and decreasing by a percentage Percentage problems Compound percentages Ratio Dividing in a given ratio Direct proportion Inverse proportion

Standard B: Number operations and relationships	<p>B.12.3 Perform and explain operations on real numbers (add, subtract, multiply, divide, raise to a power, extract a root, take opposites and reciprocals, determine absolute value)</p>	Calculating with integers Absolute value functions Exponents and roots Exponent laws Negative exponents and reciprocals Rational exponents Radicals Slopes and intercepts Parallel and perpendicular lines Graphs of important non-linear functions Plotting and sketching graphs
	<p>B.12.4 In problem-solving situations involving the application of different number systems (natural, integers, rational, real) select and use appropriate computational procedures, properties (e.g., commutativity, associativity, inverses), modes of representation (e.g., rationals as repeating decimals, indicated roots as fractional exponents).</p>	Exponents Zero, negative and fractional exponents Multiplying parentheses The distributive property Factoring Algebraic fractions
	<p>B.12.5 Create and critically evaluate numerical arguments presented in a variety of classroom and real-world situations (e.g., political, economic, scientific, social)</p>	–
	<p>B.12.6 Routinely assess the acceptable limits of error when evaluating strategies, testing the reasonableness of results, using technology to carry out computations</p>	–

	<p>F.12.1 Analyze and generalize patterns of change (e.g., direct and inverse variation) and numerical sequences, and then represent them with algebraic expressions and equations</p>	<p>Direct proportion Inverse proportion Sequences and rules Arithmetic sequences Geometric sequences Other types of sequences Sequences and series The sum of an arithmetic series The sum of a geometric series Equations with parentheses and fractions Using equations to solve problems Substituting into formulas Formula problems Rearranging a formula Manipulating formulas Generating formulas</p>
	<p>F.12.2 Use mathematical functions (e.g., linear, exponential, quadratic, power) in a variety of ways, including recognizing that a variety of mathematical and real-world phenomena can be modeled by the same type of function, translating different forms of representing them (e.g., tables, graphs, functional notation, formulas), describing the relationships among variable quantities in a problem, using appropriate technology to interpret properties of their graphical representations (e.g., intercepts, slopes, rates of change, changes in rates of change, maximum, minimum)</p>	<p>The laws of logarithms Solving equations involving logarithms Exponentials and logarithms Exponential growth and decay Solving quadratic equations Graphs of quadratic functions Linear graphs Slopes and intercepts Parallel and perpendicular lines Graphs of important non-linear functions Plotting and sketching graphs</p>

Standard F: Algebraic relationships

<p>F.12.3 Solve linear and quadratic equations, linear inequalities, and systems of linear equations and inequalities numerically, graphically, including use of appropriate technology, and symbolically, including use of the quadratic formula.</p>	<p>Solving linear equations Equations with parentheses and fractions Using equations to solve problems Inequalities Solving linear inequalities Inequalities and regions Inequalities in two variables Linear graphs Slopes and intercepts Systems of equations and graphs The elimination method for systems of equations The substitution method for systems of equations Problems leading to systems of equations Solving quadratic inequalities Factoring Factoring quadratic expressions Quadratic equations and factoring Completing the square The quadratic formula Equations involving algebraic fractions Problems leading to quadratic equations Solving quadratic equations Graphs of quadratic functions</p>
<p>F.12.4 Model and solve a variety of mathematical and real-world problems by using algebraic expressions, equations, and inequalities</p>	<p>Using equations to solve problems Problems leading to quadratic equations Problems leading to systems of equations Real life graphs</p>