



# LARSON'S PREALGEBRA AND LARSON'S ALGEBRA 1 CORRELATED TO THE CALIFORNIA MATHEMATICS EXIT EXAMINATION

Prealgebra and Algebra I



**Larson’s Prealgebra and Larson’s Algebra 1 correlated to California Mathematics Exit Examination  
Grade 6, Grade 7, Algebra I**

California Mathematics Exit Examination		Larson’s Prealgebra and Larson’s Algebra 1		
		Program	Module	Topic
<b>Grade 6—Statistics, Data Analysis, and Probability</b>				
<b>1.0 The student computes and analyzes statistical measurements for data sets.</b>				
1.1	The student computes the range, mean, median, and mode of a data set.	Prealgebra	Advanced Statistics and Data Analysis	Mean, Median, and Mode
1.2	The student understands how additional data added to data sets can affect these computations of measures of central tendency.			
1.3	The student understands how the inclusion or exclusion of outliers affects measures of central tendency.			
1.4	The student knows why a specific measure of central tendency provides the most useful information in a given context.	Prealgebra	Advanced Statistics and Data Analysis	Mean, Median, and Mode
<b>2.0 The student uses data samples of a population and describes the characteristics and limitations of the samples.</b>				
2.1	The student compares different samples from a population with the data from the entire population and identifies when it makes sense to use a sample.			
2.2	The student identifies different ways of selecting a sample and which method makes a sample more representative of a population.			
2.3	The student analyzes data displays and explains how the way the question was asked might have influenced the results obtained and/or how the way the results were displayed might have influenced the conclusion reached.			
2.4	The student identifies data that represent sampling and explains why the sample may be biased.			
2.5	The student identifies claims based on statistical data and in simple cases evaluates the validity of the claims.	Prealgebra	Basic Statistics and Data Analysis	Many Topics
		Prealgebra	Advanced Statistics and Data Analysis	Many Topics
<b>3.0 The student determines theoretical and experimental probabilities and uses these to make predictions about events.</b>				
3.1	The student represents all possible outcomes for compound events in an organized way and expresses the theoretical probability of each outcome.	Prealgebra	Counting Principles	Tree Diagrams
		Prealgebra	Counting Principles	Counting Principle
		Prealgebra	Counting Principles	Permutations
		Prealgebra	Counting Principles	Combinations

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		Program	Module	Topic
(3.1 continued)		Prealgebra	Counting Principles	Pascal’s Triangle
		Prealgebra	Probability	Probability and Permutations
		Prealgebra	Probability	Probability and Combinations
3.2	The student uses data to estimate the probability for future events.	Prealgebra	Probability	Making Predictions
3.3	The student represents probabilities as ratios, proportions, and decimals between 0 and 1, and percents between 0 and 100, and checks that probabilities computed are reasonable; knows how this is related to probability of an event not occurring.	Prealgebra	Probability	The Probability of an Event
		Prealgebra	Probability	Independent Events
		Prealgebra	Probability	Probability and Permutations
		Prealgebra	Probability	Probability and Combinations
3.4	The student understands that the probability of either of two disjoint events occurring is the sum of the two individual probabilities and that the probability of one event following another, in independent trials, is the product of the two probabilities.	Prealgebra	Probability	Independent Events
3.5	The student understands the difference between independent and dependent events.	Prealgebra	Probability	Independent Events
<b>Grade 7—Number Sense</b>				
<b>1.0 The student knows the properties of, and computes with, rational numbers expressed in a variety of forms.</b>				
1.1	The student analyzes problems by identifying relationships, discriminating relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns.	Both	Covered in many topics of Larson’s Prealgebra and Larson’s Algebra 1.	
1.2	The student formulates and justifies mathematical conjectures based upon a general description of the mathematical question or problem posed.	Both	Covered in many topics of Larson’s Prealgebra and Larson’s Algebra 1.	
1.3	The student determines when and how to break a problem into simpler parts.	Both	Covered in many topics of Larson’s Prealgebra and Larson’s Algebra 1.	
<b>2.0 The student uses strategies, skills, and concepts in finding solutions.</b>				
2.1	The student uses estimation to verify the reasonableness of calculated results.	Prealgebra	Whole Numbers and Operations	Adding Whole Numbers
		Prealgebra	Integers	Multiplying Integers
		Prealgebra	Integers	Negative and Zero Exponents

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		Program	Module	Topic
(2.1 continued)		Prealgebra	Radicals	Approximating Square Roots
		Prealgebra	Algebra and Expressions	Variable Expressions
		Prealgebra	Coordinate Geometry	The Distance Formula
		Prealgebra	Algebraic Connections to Geometry	The Pythagorean Theorem and Its Converse
		Prealgebra	Geometry in Space	Volume of a Cone
		Algebra 1	Algebra and Expressions	Variable Expressions
		Algebra 1	Algebra and Expressions	Exponents and Powers
		Algebra 1	Basics of Algebra	Inequalities
		Algebra 1	Real Numbers	Multiplying Real Numbers
		Algebra 1	Exponents and Exponential Functions	Exponential Decay Functions
		Algebra 1	Algebraic Connections to Geometry	The Distance Formula
2.2	The student applies strategies and results from simpler problems to more complex problems.	Both	Covered in many topics of Larson's Prealgebra and Larson's Algebra 1.	
2.3	The student estimates unknown quantities graphically and solves for them using logical reasoning, and arithmetic and algebraic techniques.			
2.4	The student makes and tests conjectures using both inductive and deductive reasoning.			
2.5	The student uses a variety of methods such as words, numbers, symbols, charts, graphs, tables, diagrams, and models to explain mathematical reasoning.	Both	Covered in many topics of Larson's Prealgebra and Larson's Algebra 1.	
2.6	The student expresses the solution clearly and logically using appropriate mathematical notation and terms and clear language, and supports solutions with evidence, in both verbal and symbolic work.	Both	Covered in many topics of Larson's Prealgebra and Larson's Algebra 1.	
2.7	The student indicates the relative advantages of exact and approximate solutions to problems and gives answers to a specified degree of accuracy.			
2.8	The student makes precise calculations and checks the validity of the results from the context of the problem.	Both	Covered in many topics of Larson's Prealgebra and Larson's Algebra 1.	

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		Program	Module	Topic
<b>3.0 The student determines a solution is complete and moves beyond a particular problem by generalizing to other situations.</b>				
3.1	The student evaluates the reasonableness of the solution in the context of the original situation.	Both	Covered in many topics of Larson's Prealgebra and Larson's Algebra 1.	
3.2	The student notes the method of deriving the solution and demonstrates conceptual understanding of the derivation by solving similar problems.	Both	Covered in many topics of Larson's Prealgebra and Larson's Algebra 1.	
3.3	The student develops generalizations of the results obtained and the strategies used and extends them to new problem situations.	Both	Covered in many topics of Larson's Prealgebra and Larson's Algebra 1.	
<b>Algebra I</b>				
<b>1.0 The student identifies and uses the arithmetic properties of subsets of integers and rational, irrational, and real numbers, including closure properties for the four basic arithmetic operations where applicable.</b>				
1.1	The student uses properties of numbers to demonstrate whether assertions are true or false.	Prealgebra	Whole Numbers and Operations	Many Topics
		Prealgebra	Fractions	Many Topics
		Prealgebra	Mixed Numbers	Many Topics
		Prealgebra	Decimals	Many Topics
		Prealgebra	Integers	Many Topics
		Prealgebra	Rational Numbers	Many Topics
		Prealgebra	Radicals	Irrational Numbers
		Prealgebra	Radicals	The Real Number System
		Algebra 1	Real Numbers	Many Topics
<b>2.0</b>	<b>The student understands and uses such operations as taking the opposite, finding the reciprocal, taking a root, and raising to a fractional power. The student understands and uses the rules of exponents.</b>	Prealgebra	Fractions	Dividing Fractions
		Prealgebra	Integers	Absolute Value
		Prealgebra	Radicals	Writing Square Roots
		Prealgebra	Radicals	Writing Cube Roots
		Prealgebra	Radicals	Approximating Square Roots

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		Program	Module	Topic
(2.0 continued)		Prealgebra	Powers and Exponents	Multiplying Powers
		Prealgebra	Powers and Exponents	Dividing Powers
		Algebra 1	Algebra and Expressions	Exponents and Powers
		Algebra 1	Real Numbers	Absolute Value
		Algebra 1	Exponents and Exponential Functions	All Topics
		Algebra 1	Quadratic Equations and Functions	Square Roots
		Algebra 1	Quadratic Equations and Functions	Solving Quadratic Equations by Finding Square Roots
		Algebra 1	Quadratic Equations and Functions	Simplifying Radicals
		Algebra 1	Radicals and Functions	Solving Radical Equations
		Algebra 1	Radicals and Functions	Rational Exponents
<b>3.0</b>	<b>The student solves equations and inequalities involving absolute values.</b>	Algebra 1	Solving Linear Equations	Solving Absolute-Value Equations
		Algebra 1	Solving and Graphing Linear Inequalities	Solving Absolute-Value Inequalities
<b>4.0</b>	<b>The student simplifies expressions before solving linear equations and inequalities in one variable, such as <math>3(2x - 5) + 4(x - 2) = 12</math>.</b>	Prealgebra	Algebra and Expressions	Simplifying Algebraic Expressions
		Prealgebra	Algebra and Equations	Many Topics
		Prealgebra	Algebra and Inequalities	Solving Two-Step Inequalities
		Algebra 1	Solving Linear Equations	Solving an Equation Using Mental Math
		Algebra 1	Solving Linear Equations	Solving Equations Using Addition
		Algebra 1	Solving Linear Equations	Solving Equations Using Subtraction
		Algebra 1	Solving Linear Equations	Solving Equations Using Multiplication
		Algebra 1	Solving Linear Equations	Solving Equations Using Division
		Algebra 1	Solving and Graphing Linear Inequalities	Solving Inequalities Using Addition or Subtraction

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		Program	Module	Topic
(4.0 continued)		Algebra 1	Solving and Graphing Linear Inequalities	Solving Inequalities Using Multiplication or Division
<b>5.0</b>	<b>The student solves multi-step problems, including word problems, involving linear equations and linear inequalities in one variable and provides justification for each step.</b>	Prealgebra	Algebra and Equations	Solving Multi-Step Equations
		Prealgebra	Algebra and Inequalities	Solving Two-Step Inequalities
		Algebra 1	Solving Linear Equations	Solving Multi-Step Equations
		Algebra 1	Solving and Graphing Linear Inequalities	Solving Multi-Step Inequalities
<b>6.0</b>	<b>The student graphs a linear equation and computes the <math>x</math>- and <math>y</math>-intercepts (e.g., graph <math>2x + 6y = 4</math>). The student is also able to sketch the region defined by a linear inequality (e.g., he/she sketches the region defined by <math>2x + 6y &lt; 4</math>).</b>	Prealgebra	Coordinate Geometry	Graphing Linear Equations
		Prealgebra	Coordinate Geometry	Graphing Linear Inequalities in Two Variables
		Prealgebra	Algebraic Connections to Geometry	Graphing Lines Using Slope-Intercept Form
		Algebra 1	Graphing Linear Equations	Graphing Linear Equations
		Algebra 1	Graphing Linear Equations	Graphing Horizontal and Vertical Lines
		Algebra 1	Graphing Linear Equations	Graphing Lines Using Intercepts
		Algebra 1	Solving and Graphing Linear Inequalities	Graphing Inequalities
		Algebra 1	Solving and Graphing Linear Inequalities	Graphing Linear Inequalities in Two Variables
<b>7.0</b>	<b>The student verifies that a point lies on a line, given an equation of the line. The student is able to derive linear equations by using the point-slope formula.</b>	Prealgebra	Algebraic Connections to Geometry	Graphing Lines Using Slope-Intercept Form
		Algebra 1	Graphing Linear Equations	Graphing Linear Equations
		Algebra 1	Writing Linear Equations	Point-Slope Form and Equations of Parallel Lines

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		Program	Module	Topic
<b>8.0</b>	<b>The student understands the concepts of parallel lines and perpendicular lines and how those slopes are related. The student is able to find the equation of a line perpendicular to a given line that passes through a given point.</b>	Prealgebra	More Geometry in the Plane	Intersecting, Parallel, and Perpendicular Lines
		Algebra 1	Graphing Linear Equations	Graphing Horizontal and Vertical Lines
		Algebra 1	Writing Linear Equations	Point-Slope Form and Equations of Parallel Lines
		Algebra 1	Algebraic Connections to Geometry	Equations of Perpendicular Lines
<b>9.0</b>	<b>The student solves a system of two linear equations in two variables algebraically and is able to interpret the answer graphically. The student is able to solve a system of two linear inequalities in two variables and to sketch the solution sets.</b>	Algebra 1	Systems of Linear Equations and Inequalities	Solving Linear Systems by Substitution
		Algebra 1	Systems of Linear Equations and Inequalities	Solving Linear Systems by Linear Combinations
		Algebra 1	Systems of Linear Equations and Inequalities	Solutions of Linear Systems
		Algebra 1	Systems of Linear Equations and Inequalities	Systems of Linear Inequalities
		Algebra 1	Polynomials and Factoring	Adding and Subtracting Polynomials
<b>10.0</b>	<b>The student adds, subtracts, multiplies, and divides monomials and polynomials. The student solves multi-step problems, including word problems, by using these techniques.</b>	Algebra 1	Polynomials and Factoring	Multiplying Polynomials
		Algebra 1	Polynomials and Factoring	Special Products of Polynomials
		Algebra 1	Polynomials and Factoring	Factoring $x^2 + bx + c$
<b>11.0</b>	<b>The student applies basic factoring techniques to second- and simple third-degree polynomials. These techniques include finding a common factor for all terms in a polynomial, recognizing the difference of two squares, and recognizing perfect squares of binomials.</b>	Algebra 1	Polynomials and Factoring	Factoring $ax^2 + bx + c$
		Algebra 1	Polynomials and Factoring	Factoring Special Products
		Algebra 1	Polynomials and Factoring	Cubic Polynomials and Factoring

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		Program	Module	Topic
12.0	The student simplifies fractions with polynomials in the numerator and denominator by factoring both and reducing them to the lowest terms.	Algebra 1	Rational Expressions and Equations	Simplifying Rational Expressions
13.0	The student adds, subtracts, multiplies, and divides rational expressions and functions. The student solves both computationally and conceptually challenging problems by using these techniques.	Algebra 1	Rational Expressions and Equations	Multiplying and Dividing Rational Expressions
		Algebra 1	Rational Expressions and Equations	Adding and Subtracting with Like Denominators
		Algebra 1	Rational Expressions and Equations	Adding and Subtracting with Unlike Denominators
14.0	The student solves a quadratic equation by factoring or completing the square.	Algebra 1	Quadratic Equations and Functions	Solving Quadratic Equations by Finding Square Roots
		Algebra 1	Polynomials and Factoring	Factoring $x^2 + bx + c$
		Algebra 1	Polynomials and Factoring	Factoring $ax^2 + bx + c$
		Algebra 1	Radicals and Functions	Solving Quadratic Equations by Completing the Square
15.0	The student applies algebraic techniques to solve rate problems, work problems, and percent mixture problems.	Prealgebra	Ratios, Rates, and Proportions	Writing Rates
		Algebra 1	Basics of Algebra	Rates
16.0	The student understands the concepts of a relation and a function, determines whether a given relation defines a function, and gives pertinent information about given relations and functions.	Prealgebra	Algebra and Expressions	An Introduction to Functions
		Algebra 1	Functions and Graphs	An Introduction to Functions
		Algebra 1	Functions and Graphs	Graphs, Domain, and Range of Functions
		Algebra 1	Functions and Graphs	Testing for Functions
17.0	The student determines the domain of independent variables and the range of dependent variables defined by a graph, a set of ordered pairs, or a symbolic expression.	Algebra 1	Functions and Graphs	Graphs, Domain, and Range of Functions
		Algebra 1	Exponents and Exponential Functions	Graphs of Exponential Functions

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		Program	Module	Topic
(17.0 continued)		Algebra 1	Radicals and Functions	Functions Involving Square Roots
<b>18.0</b>	<b>The student determines whether a relation defined by a graph, a set of ordered pairs, or a symbolic expression is a function and justifies the conclusion.</b>	Algebra 1	Functions and Graphs	Testing for Functions
<b>19.0</b>	<b>The student knows the quadratic formula and is familiar with its proof by completing the square.</b>	Algebra 1	Quadratic Equations and Functions	Solving Quadratic Equations by the Quadratic Formula
<b>20.0</b>	<b>The student uses the quadratic formula to find the roots of a second-degree polynomial and to solve quadratic equations.</b>	Algebra 1	Quadratic Equations and Functions	Solving Quadratic Equations by the Quadratic Formula
		Algebra 1	Quadratic Equations and Functions	Graphing Quadratic Functions
<b>21.0</b>	<b>The student graphs quadratic functions and knows that their roots are the <math>x</math>-intercepts.</b>	Algebra 1	Quadratic Equations and Functions	Graphing Quadratic Functions
		Algebra 1	Quadratic Equations and Functions	Solving Quadratic Equations by Graphing
<b>22.0</b>	<b>The student uses the quadratic formula or factoring techniques or both to determine whether the graph of a quadratic function will intersect the <math>x</math>-axis in zero, one, or two points.</b>	Algebra 1	Quadratic Equations and Functions	Graphing Quadratic Functions
		Algebra 1	Quadratic Equations and Functions	Solving Quadratic Equations by Graphing
		Algebra 1	Quadratic Equations and Functions	Solving Quadratic Equations by the Quadratic Formula
<b>23.0</b>	<b>The student applies quadratic equations to physical problems, such as the motion of an object under the force of gravity.</b>	Algebra 1	Quadratic Equations and Functions	Most Topics
<b>24.0 The student use and know simple aspects of a logical argument.</b>				
24.1	The student explains the difference between inductive and deductive reasoning and identifies and provides examples of each.			
24.2	The student identifies the hypothesis and conclusion in logical deduction.			
24.3	The student uses counterexamples to show that an assertion is false and recognizes that a single counterexample is sufficient to refute an assertion.			

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		Program	Module	Topic
<b>25.0 The student use properties of the number system to judge the validity of results, to justify each step of a procedure, and to prove or disprove statements.</b>				
25.1	The student uses properties of numbers to construct simple, valid arguments (direct and indirect) for, or formulates counterexamples to claimed assertions.	Both	Covered in many topics of Larson's Prealgebra and Larson's Algebra 1.	
25.2	The student judges the validity of an argument according to whether the properties of the real number system and the order of operations have been applied correctly at each step.	Prealgebra	Whole Numbers and Operations	Order of Operations
		Prealgebra	Also covered in many other topics of Larson's Prealgebra.	
		Algebra 1	Algebra and Expressions	Understanding Order of Operations
		Algebra 1	Also covered in many other topics of Larson's Algebra 1.	
25.3	Given a specific algebraic statement involving linear, quadratic, or absolute value expressions or equations or inequalities, the student determines whether the statement is true sometimes, always, or never.			