

Algebra I

State Standard Number	State Standard Area/Description	Unit Name	Course Topic Description
H.1A	Demonstrate a deep understanding of real numbers and algebraic symbols by fluently creating, manipulating, computing with, and determining equivalent expressions, both numeric and symbolic.		
H.1A.1	Compare, order, and locate real numbers on a number line.	Real Numbers	Section 1, Part 3
H.1A.2	Evaluate, compute with, and determine equivalent numeric and algebraic expressions with real numbers and variables that may also include absolute value, integer exponents, square roots, pi, and/or scientific notation.	Variables and Expressions Real Numbers Polynomials	Section 4, Part 1, 2 Section 2, Part 4 Section 3
H.1A.3	Express square roots in equivalent radical form and their decimal approximations when appropriate.	Quadratics and Radicals	Section 3
H.1A.4	Develop, identify, and/or justify equivalent algebraic expressions, equations, and inequalities using the properties of exponents, equality and inequality, as well as the commutative, associative, inverse, identity, and distributive properties.	Variables and Expressions Inequalities	Section 1, Part 2 Section 2 Section 3, Part 2 Section 1
H.1A.5	Factor quadratic expressions limited to factoring common monomial terms, perfect-square trinomials, differences of squares, and quadratics of the form $x^2 + bx + c$ that factor over the integers.	Polynomials	Sections 4, 5, 6
H.2A	Use linear equations and functions to represent relationships and solve linear equations, linear inequalities, systems of linear equations, and systems of linear inequalities.		
H.2A.1	Identify, construct, extend, and analyze linear patterns and functional relationships that are expressed contextually,	Functions and Linear Equations	Section 3

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	numerically, algebraically, graphically, in tables, or using geometric figures.		
H.2A.2	Given a rule, a context, two points, a table of values, a graph, or a linear equation in either slope intercept or standard form, identify the slope of the line, determine the x and/or y intercept(s), and interpret the meaning of each.	Functions and Linear Equations	Section 2
H.2A.3	Determine the equation of a line given any of the following information: two points on the line, its slope and one point on the line, or its graph. Also, determine an equation of a new line, parallel or perpendicular to a given line, through a given point.	Functions and Linear Equations	Section 2, Part 3 Section 4, Part 4 Section 4, Part 7, 8
H.2A.4	Fluently convert among representations of linear relationships given in the form of a graph of a line, a table of values, or an equation of a line in slope-intercept and standard form.	Functions and Linear Equations	Section 2 Section 4, Part 6
H.2A.5	Given a linear function, interpret and analyze the relationship between the independent and dependent variables. Solve for x given f(x) or solve for f(x) given x.	Functions and Linear Equations	Section 1, Part 4
H.2A.6	Analyze how changing the parameters transforms the graph of $f(x) = mx + b$.		
H.2A.7	Write, use, and solve linear equations and inequalities using graphical and symbolic methods with one or two variables. Represent solutions on a coordinate graph or number line.	Functions and Linear Equations Inequalities	Section 1, Part 1 Section 1 Section 4

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H.2A.8	Solve systems of two linear equations graphically and algebraically, and solve systems of two linear inequalities graphically.	Solving Systems	Section 1, Part 3, 4 Section 3, Part 2, 3
H.3A	Use quadratic and exponential equations and functions to represent relationships.		
H.3A.1	Given a quadratic or exponential function, identify or determine a corresponding table or graph.	Quadratics and Radicals Exponentials	Section 1, Part 1, 2 Section 2, Part 3
H.3A.2	Given a table or graph that represents a quadratic or exponential function, extend the pattern to make predictions.	Exponentials	Section 1
H.3A.3	Compare the characteristics of and distinguish among linear, quadratic, and exponential functions that are expressed in a table of values, a sequence, a context, algebraically, and/or graphically, and interpret the domain and range of each as it applies to a given context.		
H.3A.4	Given a quadratic or exponential function, interpret and analyze the relationship between the independent and dependent variables, and evaluate the function for specific values of the domain.		
H.3A.5	Given a quadratic equation of the form $x^2 + bx + c = 0$ with integral roots, determine and interpret the roots, the vertex of the parabola that is the graph of $y = x^2 + bx + c$, and an equation of its axis of symmetry graphically and	Quadratics and Radicals	Section 1, Part 4



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