

ALGEBRA I

HSCE	Activities	Resources/Materials	Assessment
L1.1.1 Know the different properties that hold in different number systems and recognize that the applicable properties change in the transition from the positive integers to all integers, to the rational numbers, and to the real numbers.	Chapter 1-5: p. 35, #11-19. 24-26, 31-41, 43, 45-47 Chapter 1-7: p. 49, #26-54 (omit 45)		
L1.1.2 Explain why the multiplicative inverse of a number has the same sign as the number, while the additive inverse of a number has the opposite sign.	Chapter 1-2: p. 17, #13-35, 37-42, 44-47 Chapter 1-3: p. 23, #14-46, 48, 52, 55-67		
L1.1.3 Explain how the properties of associativity, commutativity, and distributivity, as well as identity and inverse elements, are used in arithmetic and algebraic calculations.	Chapter 1-2: p. 17, #13-35, 37-42, 44-47 Chapter 1-3: p. 23, #14-46, 48, 52, 55-67 Chapter 1-7: p. 49, #26-54 (omit 45)		
L1.1.4 Describe the reasons for the different effects of multiplication by, or exponentiation of, a positive number by a number less than 0, a number between 0 and 1, and a number greater than 1.	Chapter 1-3: p. 23, #14-46, 48, 52, 55-67 Chapter 11-2: p. 776, # 1 – 17 odd, 18 - 32 even, 45		
L1.1.5 Justify numerical relationships			
L1.2.2 Interpret representations that reflect absolute value relationships.	Chapter 3 Extension: p. 215, #1-21 all		
L1.2.4 Organize and summarize a data set in a table, plot, chart, or spreadsheet; find patterns in a display of data; understand and critique data displays in the media.	Statistics Chapter 10.1: p.683-685, #1-34 Statistics Chapter 10.4: p.704-705, #1-14	Statistics Chapter 10.4: Weighted average problems on guided notes	
L2.1.1 Explain the meanings and uses of weighted averages (e.g., GNP, consumer price index, grade point average)	Statistics Chapter 10.4: p.704-705, #1-14		
L2.1.2 Calculate fluently with numerical expressions	Chapter 7–1: p. 449, #26-64 even		

ALGEBRA I

HSCE	Activities	Resources/Materials	Assessment
involving exponents. Use the rules of exponents, and evaluate numerical expressions involving rational and negative exponents, and transition easily between roots and exponents.	Chapter 7-3: p. 464, #18-52 even, 53, 56-66 even, 69-74 Chapter 7-4: p. 471, #18-44, 50-53 Chapter 11: p. 834, #3 – 75 multiples of 3		
L2.1.4 Know that the imaginary number i is one of two solutions to $x^2 = -1$.	Chapter 9-7: p. 639, #17-36, 41, 44, 45		
A1.1.1 Give a verbal description of an expression that is presented in symbolic form, write an algebraic expression from a verbal description, and evaluate expressions given values of the variables	Chapter 1-1: p. 9, #18-50 even		
A1.1.2 Know the properties of exponents and roots, and apply them in algebraic expressions	Chapter 1-4: p. 29, #16-46, 48-63 Chapter 7-1: p. 449, #26-64 even Chapter 7-3: p. 464, #18-52 even, 53, 56-66 even, 69-74 Chapter 7-4: p. 471, #18-44, 50-53 Chapter 11: p. 834, #3 – 75 multiples of 3		
A1.1.3 Factor algebraic expressions using, for example, greatest common factor, grouping, and the special product identities	Chapter 8-1: Practice A; Practice B Chapter 8-2: Practice B Chapter 8-3: p. 544, #17-50 Chapter 8-4: p. 552, #26-50 even, 55-63 Chapter 8-5: p. 562, #14-35		
A1.2.1 Write and solve equations and inequalities with one (or two) variables to represent mathematical or applied situations.	Chapter 2-1: p. 80, #22-50 even, 51-57 odd Chapter 2-2: p. 87, #22-46 even, 49,		

ALGEBRA I

HSCE	Activities	Resources/Materials	Assessment
	52-55, 58 Chapter 2-3: p. 96, #24-42 even, 50-52 Chapter 2-4: p. 103, #15-27 odd, 28-32, 34-36, 39, 40, 45, 47, 54, 55 Chapter 3-1: p. 171, #18-32 even, 42, 43, 50-53, 70-80 even Chapter 3-2: p. 177, #7-11, 13-15, 16-22 even, 26-29, 31, 47, 48, 50 Chapter 3-3: p. 183, #20-52 every 4 th , 57-61, 64, 84, 85 Chapter 3-4: p. 191, #16-48 even, 51-54, 77-83 Chapter 3-5: p. 197, #2-26 even, 33-38, 52-56, 73-74 Chapter 6-4: p. 409, #1-22 odd		
A1.2.2 Associate a given equation with a function whose zeros are the solutions of the equation.	Chapter 9-2: p. 604, #13-28 Chapter 9-5: p. 625, #15-24, 31, 33, 34-36 Chapter 9-8: p. 649, #18-46, 50-58 even		
A1.2.3 Solve linear and quadratic equations and inequalities, including systems of up to three linear equations with three unknowns. Justify steps in the solutions, and apply the quadratic formula appropriately.	Chapter 6-1: p. 386, #1-7, 19, 28, 29, 40-42 Chapter 6-2: p. 394, #1-6, 8-16; challenge WS Chapter 6-3: p. 401, #1-9, 33, 34, 43-48; challenge WS Chapter 6-5: p. 418, #2-26 even, 29-36 all Chapter 6-6: p. 424, #1-27 odd, 31-37 odd Chapter 9-6: p. 633, #20-39, 40, 42 Chapter 9-7: p. 639, #17-36, 41, 44,	Chapter 6-1: Graph Calc and graph paper Chapter 6-5: Graph paper Chapter 6-6: Graph paper	

ALGEBRA I

HSCE	Activities	Resources/Materials	Assessment
	45 Chapter 9-9: p. 657, #2-29		
A1.2.4 Solve absolute value equations and inequalities and justify steps in the solution.	Chapter 2- Extension: p. 150, #2-42 even Chapter 3-6: p. 206 #1-28, 30-35, 57-59 Chapter 3 Extension: p. 215, #1-21 all		
A1.2.6 Solve power equations and equations including radical expressions, justify steps in the solution, and explain how extraneous solutions may arise.	Chapter 11-4: p. 801, #3, 7, 11, 16 – 34, 37 Chapter 11-6: p. 808, #1-21 odd, 24-60 even, 61 Chapter 11-7: p. 813, #15-47 Chapter 11-8: p. 819, #3 – 72 multiples of 3 Chapter 11-9: p. 826, #3-30 mult. of 3, 42-57 mult. of 3; p. 826, #33-39 mult. of 3, 59-66 all, 69, 72		
A1.2.8 Solve an equation involving several variables (with numerical or letter coefficients) for a designated variable. Justify steps in the solution.	Chapter 2-5: p. 109, #8-28, 30, 34		
A2.1.1 Determine whether a relationship (given in contextual, symbolic, tabular, or graphical form) is a function and identify its domain and range.	Chapter 4-2: p. 240, #1-25, 34; p. 243 Try This #1-3		
A2.1.2 Read, interpret, and use function notation and evaluate a function at a value in its domain.	Chapter 4-3 #p. 249, #1-26 Alg2 1-7: 1-7 Reading Strategies; 1-7 Practice B		
A2.1.3 Represent functions in symbols, graphs, tables, diagrams, or words and translate among representations.	Chapter 3 Text: Reteach 4-1; 4-1 Practice B Chapter 4: Reteach and Practice B		

ALGEBRA I

HSCE	Activities	Resources/Materials	Assessment
	Chapter 4-4: p. 256, #2-42 even		
A2.1.4 Recognize that functions may be defined by different expressions over different intervals of their domains. Such functions are piecewise-defined		Chapter 4 Alg2 9-2: Practice A and Practice B	
A2.1.5 Recognize that functions may be defined recursively. Compute values of and graph simple recursively defined functions		Chapter 4: Recursively Defined Functions worksheet	
A2.1.6 Identify the zeros of a function and the intervals where the values of a function are positive or negative. Describe the behavior of a function as x approaches positive or negative infinity, given the symbolic and graphical representations.		Polynomial Chapter 6-7: Graphing polynomial WS Day 1; Graphing Polynomials Practice WS	
A2.1.7 Identify and interpret the key features of a function from its graph or its formula(e),		Polynomial Chapter 6-7: Graphing polynomial WS Day 1; Graphing Polynomials Practice WS	
A2.2.1 Combine functions by addition, subtraction, multiplication, and division.		Polynomial Chapter 9-4: Worksheet 9-4	
A2.2.2 Apply given transformations to parent functions and represent symbolically.	Chapter 11-4: p. 801, #3, 7, 11, 16 – 34, 37	Chapter 4: Parent Function Worksheet 1 Chapter 4: Parent Function Worksheet 2 Chapter 4: Family of Functions Worksheet	
A2.2.3 Determine whether a function (given in tabular or graphical form) has an inverse and recognize simple inverse pairs		Polynomial Chapter 7-2: Homework Worksheet	
A2.3.1 Identify a function as a member of a family of		Chapter 4: Parent Function	

ALGEBRA I

HSCE	Activities	Resources/Materials	Assessment
functions based on its symbolic or graphical representation. Recognize that different families of functions have different asymptotic behavior.		Worksheet 1 Chapter 4: Parent Function Worksheet 2 Chapter 4: Family of Functions Worksheet	
A2.3.2 Describe the tabular pattern associated with functions having constant rate of change (linear) or variable rates of change.	Chapter 5-1: p. 300, #1-29, 31-49 odd, 64-70 Chapter 5-3: p. 314, #1-11 odd, 13-20, 36-38		
A2.3.3 Write the general symbolic forms that characterize each family of functions.			
A2.4.1 Identify the family of functions best suited for modeling a given real-world situation.	Chapter 11-4: p. 793, #8 – 22		
A2.4.2 Adapt the general symbolic form of a function to one that fits the specifications of a given situation by using the information to replace arbitrary constants with numbers.	Chapter 11-4: p. 793, #8 – 22		
A2.4.3 Using the adapted general symbolic form, draw reasonable conclusions about the situation being modeled.	Chapter 11-4: p. 793, #8 – 22		
A3.1.1 Write the symbolic forms of linear functions (standard point-slope, and slope-intercept) given appropriate information and convert between forms.	Chapter 5-6: p. 338, #13-20 all, 26, 29, 30-35 Chapter 5-7: p. 345, #2-40 even, 59, 60		
A3.1.2 Graph lines (including those of the form $x = h$ and $y = k$) given appropriate information.	Chapter 5-1: p. 300, #1-29, 31-49 odd, 64-70 Chapter 5-2: p. 306, #1-11 odd, 13-22, 25-30, 34-37, 49, 51 Chapter 5-7: p. 345, #2-40 even, 59, 60		

ALGEBRA I

HSCE	Activities	Resources/Materials	Assessment
A3.1.3 Relate the coefficients in a linear function to the slope and x- and y-intercepts of its graph.	Chapter 5-2: p. 306, #1-11 odd, 13-22, 25-30, 34-37, 49, 51 Chapter 5-3: p. 314, #1-11 odd, 13-20, 36-38		
A3.1.4 Find an equation of the line parallel or perpendicular to given line through a given point. Understand and use the facts that non-vertical parallel lines have equal slopes and that non-vertical perpendicular lines have slopes that multiply to give -1.	Chapter 5-8: p. 353, #9-21 all, 22-44 even, 46 - 48		
A3.2.1 Write the symbolic form and sketch the graph of an exponential function given appropriate information.	Chapter 11-2: p. 776, # 1 – 17 odd, 18 - 32 even, 45		
A3.2.4 Understand and use the fact that the base of an exponential function determines whether the function increases or decreases and how base affects the rate of growth or decay.	Chapter 11-2: p. 776, # 1 – 17 odd, 18 - 32 even, 45		
A3.2.5 Relate exponential functions to real phenomena, including half-life and doubling time.	Chapter 11-3: p. 785, #10 – 33		
A3.3.1 Write the symbolic form and sketch the graph of a quadratic function given appropriate information.	Chapter 9-1: p. 594, #22-38, 45-50, 53-60 Chapter 9-4: p. 617, #10-17, 24-32, 34		
A3.3.2 Identify the elements of a parabola (vertex, axis of symmetry, and direction of opening) given its symbolic form or its graph and relate these elements to the coefficient(s) of the symbolic form of the function.	Chapter 9-1: p. 594, #22-38, 45-50, 53-60 Chapter 9-2: p. 604, #13-28	Chapter 9: Graphing Quadratics Worksheets	
A3.3.3 Convert quadratic functions from standard to vertex form by completing the square.		Chapter 9-8: Worksheet	

ALGEBRA I

HSCE	Activities	Resources/Materials	Assessment
A3.3.4 Relate the number of real solutions of a quadratic equation to the graph of the associated quadratic function.	Chapter 9-2: p. 604, #13-28 Chapter 9-3: p. 609, #8-26, 36		
A3.3.5 Express quadratic functions in vertex form to identify their maxima or minima and in factored form to identify their zeros.		Chapter 9-8: Worksheet	
A3.4.1 Write the symbolic form and sketch the graph of power functions.		Polynomial Chapter 6-7: Graphing polynomial WS Day 1; Graphing Polynomials Practice WS	
A3.4.2 Express directly and inversely proportional relationships as functions and recognize their characteristics.	Chapter 5-5: p. 329, #10-34 even, 37, 45 Polynomial Chapter: p. 855, #1-11, 13-29 odd		
A3.4.3 Analyze the graphs of power functions, noting reflectional or rotational symmetry		Polynomial Chapter 6-7: Graphing polynomial WS Day 1; Graphing Polynomials Practice WS	
A3.5.1 Write the symbolic form and sketch the graph of simple polynomial functions.		Polynomial Chapter 6-7: Graphing polynomial WS Day 1; Graphing Polynomials Practice WS	
A3.5.2 Understand the effects of degree, leading coefficient, and number of real zeros on the graphs of polynomial functions of degree greater than 2.		Polynomial Chapter 6-7: Graphing polynomial WS Day 1; Graphing Polynomials Practice WS	
A3.5.3 Determine the maximum possible number of zeroes of a polynomial function and understand the relationship between the x-intercepts of the graph and the factored form of the function.		Polynomial Chapter 6-5: Worksheet 6-5	

ALGEBRA I

HSCE	Activities	Resources/Materials	Assessment
S2.1.1 Construct a scatterplot for a bivariate data set with appropriate labels and scales.	Statistics Chapter 4.5: pp.266-268 #2, 3, 14-27	Statistics Chapter 4.5: Find an example from the internet, magazine, or newspaper that demonstrates an example of a scatter plot with an outlier.	
S2.1.2 Given a scatterplot, identify patterns, clusters, and outliers. Recognize no correlation, weak correlation, and strong correlation.	Statistics Chapter 4.5: pp.266-268 #2, 3, 14-27	Statistics Chapter 4.5: Find an example from the internet, magazine, or newspaper that demonstrates an example of a scatter plot with an outlier.	
S2.1.3 Estimate and interpret Pearson's correlation coefficient for a scatterplot of a bivariate data set. Recognize that correlation measures the strength of linear association.	Statistics Chapter: Practice A; Practice B		
S2.1.4 Differentiate between correlation and causation. Know that a strong correlation does not imply a cause-and-effect relationship. Recognize the role of lurking variables in correlation.	Statistics Chapter: Practice A; Practice		
S2.2.1 For bivariate data that appear to form a linear pattern, find the least squares regression line by estimating visually and by calculating the equation of the regression line. Interpret the slope of the equation for a regression line.	Statistics Chapter: Practice A; Practice B		
S2.2.2 Use the equation of the least squares regression line to make appropriate predictions.	Statistics Chapter: Practice A; Practice B		