**Virginia Standards of Learning Assessment**

**Algebra I (2016 SOL) Performance Level Descriptors**

| **Fail/Does Not Meet**  | **Pass/Proficient**  | **Pass/Advanced**  |
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| A student performing at this level should be able to:*Reporting Category 1: Expressions and Operations** identify verbal phrases that represent algebraic expressions
* substitute values into expressions
* identify the square root of a perfect square
* identify the cube root of a perfect cube
* represent polynomial expressions using concrete and pictorial representations
* add/subtract polynomials
* add/subtract two monomial radicals with like radicands
* factor a numerical greatest common factor from a polynomial expression

*Reporting Category 2: Equations and Inequalities** identify solution(s) to:
	+ systems of linear equations graphically, and
	+ systems of linear inequalities graphically
* identify solution(s), given a graph, to a
	+ linear equation,
	+ linear inequality, and
	+ quadratic equation
* identify the slope and y-intercept given:
	+ the graph of the line,
	+ two points on a graph , or
	+ the equation of the line in slope-intercept form
* write the equation of the line in slope-intercept form given the graph of the line
* graph a line given the equation in slope-intercept form

*Reporting Category 3: Functions and Statistics** identify a direct variation from a graph
* use a line of best fit to interpret a set of data
* determine the domain and range of a discrete function
* determine whether a relation is a function
 | A student performing at this level should be able to:*Reporting Category 1: Expressions and Operations** translate between verbal and algebraic expressions
* evaluate expressions for given replacement values
* simplify square roots of whole numbers and monomial expressions
* simplify cube roots of integers
* perform operations on two monomial radical expressions
* determine sums, differences, and products of polynomial expressions and quotients using a monomial, binomial, or factored divisor
* factor polynomial expressions

*Reporting Category 2: Equations and Inequalities** solve:
	+ multistep linear equations,
	+ linear inequalities,
	+ quadratic equations,
	+ systems of linear equations,
	+ systems of linear inequalities, and
	+ one or two-step literal equations
* represent practical situations involving:
	+ systems of linear equations, and
	+ systems of linear inequalities
* graph a linear equation
* write the equation of a line given:
	+ the graph,
	+ two points, and
	+ a point and slope

*Reporting Category 3: Functions and Statistics** determine characteristics of linear and quadratic functions, including:
	+ domain,
	+ range,
	+ zeros, and
	+ x- and y-intercepts
* determine the curve of best fit for a set of data
* analyze a relation to determine direct or inverse variation
* identify multiple representations of functions
 | A student performing at this level should be able to:*Reporting Category 1: Expressions and Operations** represent and evaluate practical quantitative situations verbally and algebraically
* simplify and perform operations on monomial and polynomial expressions, including monomial expressions that contain square or cube roots with leading coefficients
* factor and verify algebraic factorizations of polynomial expressions

*Reporting Category 2: Equations and Inequalities** solve practical problems involving:
	+ multistep linear equations,
	+ linear inequalities,
	+ literal equations,
	+ quadratic equations,
	+ systems of linear equations, and
	+ systems of linear inequalities
* describe the effects of linear function transformations defined by changes in the slope or the y-intercept
* write the equation of a line given:
	+ the graph,
	+ two points, and
	+ a point and slope
* graph a linear equation to represent a practical situation

*Reporting Category 3: Functions and Statistics** analyze characteristics of linear and quadratic functions that involve or describe practical situations including:
	+ domain,
	+ range,
	+ zeros, and
	+ x- and y-intercepts
* analyze models of direct and inverse variation to generate conclusions from practical situations
* model and make predictions for a set of data using the curve of best fit
* make connections among multiple representations of functions
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