**Virginia Standards of Learning Assessment**

**Algebra II (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** add, subtract, and simplify:
	+ radical expressions, and
	+ polynomial expressions
* add and subtract:
	+ complex numbers having like denominators, and
	+ rational expressions having like denominators
* factor polynomials without a greatest common factor (limited to three terms)

*Reporting Category 2: Equations and Inequalities** find solutions from graphs of:
	+ equations,
	+ inequalities, and
	+ nonlinear systems of equations

*Reporting Category 3: Functions and Statistics** identify characteristics of a function and its family including:
	+ zeros,
	+ intercepts, and
	+ values
* identify curves of best fit for a data set
* identify whether a situation can be represented by a direct or inverse variation
* identify a permutation and combination
* identify properties of a normal distribution
* find the *n*th term or write the first *n* terms of an arithmetic or geometric sequence
* identify the graphs of parent functions
 | A student performing at this level should be able to:*Reporting Category 1: Expressions and Operations** simplify and perform operations on:
	+ complex numbers,
	+ radical expressions,
	+ rational expressions, and
	+ polynomial expressions
* factor polynomials

*Reporting Category 2: Equations and Inequalities** solve equations including:
	+ absolute value,
	+ quadratic,
	+ radical,
	+ rational equations, and
	+ nonlinear systems
* solve absolute value linear inequalities

*Reporting Category 3: Functions and Statistics** determine characteristics of a function, including:
	+ zeros,
	+ intercepts,
	+ factors of polynomial expressions,
	+ domain, range, continuity, and discontinuity,
	+ interval behavior,
	+ asymptotes, and
	+ extrema
* make connections among multiple representations of a function
* analyze transformations of parent functions
* determine curves of best fit
* solve problems involving:
	+ permutations and combinations, and
	+ joint, inverse, or a combination of variations
* solve problems and compare normally distributed data sets using:
	+ mean,
	+ standard deviation, and
	+ z-scores
* determine the *n*th term and write the first *n* terms of an arithmetic or geometric sequence
* determine the sum of an arithmetic or geometric series and the sum of a convergent infinite series
 | A student performing at this level should be able to:*Reporting Category 1: Expressions and Operations** apply multistep simplification and perform operations on:
	+ complex numbers,
	+ radical expressions,
	+ rational expressions, and
	+ polynomial expressions
* discriminate between methods to efficiently factor polynomials that require multiple steps

*Reporting Category 2: Equations and Inequalities** interpret, model, and solve practical problems using:
	+ equations,
	+ inequalities, and
	+ nonlinear systems of equations

*Reporting Category 3: Functions and Statistics** analyze characteristics of functions that involve or describe practical situations including:
	+ zeros,
	+ intercepts,
	+ factors of polynomial expressions,
	+ domain, range, continuity, and discontinuity,
	+ interval behavior,
	+ asymptotes, and
	+ extrema
* make connections among multiple representations of a function
* analyze transformations of parent functions
* determine and interpret curves of best fit
* solve practical problems involving:
	+ permutations and combinations, and
	+ joint, inverse, or a combination of variations
* apply properties to find the probability associated with areas under the normal curve given practical situations
* use z-scores to compare data
* model and solve practical problems using sequences and series
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