Ideal % of Test	Ideal # of Items	Algebra II State *PASS/OAS*
27%	**15**	**Number Sense and Algebraic Operations (1.0)**
		Standard 1: The student will perform operations with rational, radical, and polynomial expressions, as well as expressions involving complex numbers.
	5-6	**Rational Exponents (1.1)**
		a. Convert expressions from radical notations to rational exponents and vice versa. **b.** Add, subtract, multiply, divide, and simplify radical expressions and expressions containing rational exponents.
	5-6	**Polynomial and Rational Expressions (1.2)**
		a. Divide polynomial expressions by lower degree polynomials. **b.** Add, subtract, multiply, divide, and simplify rational expressions, including complex fractions.
	4	**Complex Numbers (1.3)**
		***a.** Recognize that to solve certain problems and equations, number systems need to be extended from real numbers to complex numbers. **b.** Add, subtract, multiply, divide, and simplify expressions involving complex numbers.
56%	**31**	**Relations and Functions (2.0)**
		Standard 2: Relations and Functions - The student will use the relationships among the solution of an equation, zero of a function, x-intercepts of a graph, and factors of a polynomial expression to solve problems involving relations and functions.
	5	**Functions and Function Notation (2.1)**
		a. Recognize the parent graphs of polynomial, exponential, radical, quadratic, and logarithmic functions and predict the effects of transformations on the parent graphs, using various methods and tools which may include graphing calculators. **b.** Add, subtract, multiply, and divide functions using function notation. **c.** Combine functions by composition. **d.** Use algebraic, interval, and set notations to specify the domain and range of functions of various types. **e.** Find and graph the inverse of a function, if it exists.
	5	**Systems of Equations (2.2)**
		a. Model a situation that can be described by a system of equations or inequalities and use the model to answer questions about the situation. **b.** Solve systems of linear equations and inequalities using various methods and tools which may include substitution, elimination, matrices, graphing, and graphing calculators. ***c.** Use either one quadratic equation and one linear equation or two quadratic equations to solve problems.

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	5	**Quadratic Equations and Functions (2.3)**
		a. Solve quadratic equations by graphing, factoring, completing the square and quadratic formula. **b.** Graph a quadratic function and identify the x- and y-intercepts and maximum or minimum value, using various methods and tools which may include a graphing calculator. **c.** Model a situation that can be described by a quadratic function and use the model to answer questions about the situation.
	4	**Conic Sections (2.4)**
		Identify, graph, and write the equations of the conic sections (circle, ellipse, parabola, and hyperbola).
	4	**Exponential and Logarithmic Functions (2.5)**
		a. Graph exponential and logarithmic functions. **b.** Apply the inverse relationship between exponential and logarithmic functions to convert from one form to another. **c.** Model a situation that can be described by an exponential or logarithmic function and use the model to answer questions about the situation.
	4	**Polynomial Equations and Functions (2.6)**
		a. Solve polynomial equations using various methods and tools which may include factoring and synthetic division. **b.** Sketch the graph of a polynomial function. **c.** Given the graph of a polynomial function, identify the x- and y-intercepts, relative maximums and relative minimums, using various methods and tools which may include a graphing calculator. **d.** Model a situation that can be described by a polynomial function and use the model to answer questions about the situation.
	4	**Rational Equations and Functions (2.7)**
		a. Solve rational equations. **b.** Sketch the graph of a rational function. **c.** Given the graph of a rational function, identify the x- and y-intercepts, vertical asymptotes, using various methods and tools which may include a graphing calculator. **d.** Model a situation that can be described by a rational function and use the model to answer questions about the situation.
16%	**9**	**Data Analysis, Probability, and Statistics (3.0)**
		Standard 3: The student will use data analysis and statistics to formulate and justify predictions from a set of data.
	5	**Analysis of Collected Data (3.1)**
		a. Interpret data on a scatter plot using a linear, exponential, or quadratic model/equation. **b.** Identify whether the model/equation is a curve of best fit for the data, using various methods and tools. (graphing calculator)

Ideal % of Test	Ideal # of Items	Algebra II State *PASS/OAS*
	4	**Arithmetic and Geometric Sequences (3.3)**
		Identify and use arithmetic and geometric sequences and series to solve problems.
100%	**55**	**Total Test**