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Correlation of AMSCO Algebra I to the PA Algebra I Keystone Exam

Anchor Descriptor	Eligible Content	AMSCO Algebra I Lesson(s)
A1.1.1 Operations with Real Numbers and Expressions		
A1.1.1.1 Represent and/or use numbers in equivalent forms (e.g., integers, fractions, decimals, percents, square roots, and exponents).	**A1.1.1.1.1** Compare and/or order any real numbers. Note: Rational and irrational may be mixed.	Prior grade level
	A1.1.1.1.2 Simplify square roots (e.g., $\sqrt{24} = 2\sqrt{6}$).	1.7
A1.1.1.2 Apply number theory concepts to show relationships between real numbers in problem- solving settings.	**A1.1.1.2.1** Find the Greatest Common Factor (GCF) and/or the Least Common Multiple (LCM) for sets of monomials.	7.1
A1.1.1.3 Use exponents, roots, and/or absolute values to solve problems.	**A1.1.1.3.1** Simplify/evaluate expressions involving properties/laws of exponents, roots, and/or absolute values to solve problems. Note: Exponents should be integers from –10 to 10.	1.6, 4.1, 4.4, 6.6
A1.1.1.4 Use estimation strategies in problem-solving situations.	**A1.1.1.4.1** Use estimation to solve problems.	2.4, 3.4, 3.8, 4.1, 5.4
A1.1.1.5 Simplify expressions involving polynomials.	**A1.1.1.5.1** Add, subtract, and/or multiply polynomial expressions (express answers in simplest form). Note: Nothing larger than a binomial multiplied by a trinomial.	6.1, 6.2, 6.3, 6.4, 6.5
	A1.1.1.5.2 Factor algebraic expressions, including difference of squares and trinomials. Note: Trinomials are limited to the form $ax^2 + bx + c$ where a is equal to 1 after factoring out all monomial factors.	7.1, 7.2, 7.3, 7.4, 8.2
	A1.1.1.5.3 Simplify/reduce a rational algebraic expression.	6.7, 8.2
A1.1.2 Linear Equations		
A1.1.2.1 Write, solve, and/or graph linear equations using various methods. *	**A1.1.2.1.1** Write, solve, and/or apply a linear equation (including problem situations).	2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.4
	A1.1.2.1.2 Use and/or identify an algebraic property to justify any step in an equation-solving process. Note: Linear equations only.	2.1, 2.3

	A1.1.2.1.3 Interpret solutions to problems in the context of the problem situation. Note: Linear equations only.	3.3, 3.8
A1.1.2.2 Write, solve, and/or graph systems of linear equations using various methods. *	**A1.1.2.2.1** Write and/or solve a system of linear equations (including problem situations) using graphing, substitution, and/or elimination. Note: Limit systems to two linear equations.	5.1, 5.2, 5.3
	A1.1.2.2.2 Interpret solutions to problems in the context of the problem situation. Note: Limit systems to two linear equations.	5.1, 5.2, 5.3
A1.1.3 Linear Inequalities		
A1.1.3.1 Write, solve, and/or graph linear inequalities using various methods.	**A1.1.3.1.1** Write or solve compound inequalities and/or graph their solution sets on a number line (may include absolute value inequalities).	2.5, 2.6, 4.2
	A1.1.3.1.2 Identify or graph the solution set to a linear inequality on a number line.	2.5, 4.2
	A1.1.3.1.3 Interpret solutions to problems in the context of the problem situation. Note: Linear inequalities only.	2.6, 4.1
A1.1.3.2 Write, solve, and/or graph systems of linear inequalities using various methods.*	**A1.1.3.2.1** Write and/or solve a system of linear inequalities using graphing. Note: Limit systems to two linear inequalities.	5.4
	A1.1.3.2.2 Interpret solutions to problems in the context of the problem situation. Note: Limit systems to two linear inequalities.	5.4
A1.2.1 Functions		
A1.2.1.1 Analyze and/or use patterns or relations.	**A1.2.1.1.1** Analyze a set of data for the existence of a pattern and represent the pattern algebraically and/or graphically.	9.4, 9.5, 10.4
	A1.2.1.1.2 Determine whether a relation is a function, given a set of points or a graph.	3.5
	A1.2.1.1.3 Identify the domain or range of a relation (may be presented as ordered pairs, a graph, or a table).	3.5

A1.2.1.2 Interpret and/or use linear functions and their equations, graphs, or tables. *	**A1.2.1.2.1** Create, interpret, and/or use the equation, graph, or table of a linear function.	3.5, 3.7, 3.8
	A1.2.1.2.2 Translate from one representation of a linear function to another (i.e., graph, table, and equation).	3.5, 3.7, 3.8, 9.5
A1.2.2 Coordinate Geometry		
A1.2.2.1 Describe, compute, and/or use the rate of change (slope) of a line.	**A1.2.2.1.1** Identify, describe, and/or use constant rates of change.	3.3
	A1.2.2.1.2 Apply the concept of linear rate of change (slope) to solve problems.	3.3, 3.8
	A1.2.2.1.3 Write or identify a linear equation when given • the graph of the line, • two points on the line, or • the slope and a point on the line. Note: Linear equation may be in point-slope, standard, and/or slope-intercept form.	3.4, 3.8
	A1.2.2.1.4 Determine the slope and/or *y*-intercept represented by a linear equation or graph.	3.4
A1.2.2.2 Analyze and/or interpret data on a scatter plot.	A1.2.2.2.1 Draw, identify, find, and/or write an equation for a line of best fit for a scatter plot.	10.4
A1.2.3 Data Analysis		
A1.2.3.1 Use measures of dispersion to describe a set of data.	**A1.2.3.1.1** Calculate and/or interpret the range, quartiles, and interquartile range of data.	10.3
A1.2.3.2 Use data displays in problem-solving settings and/or to make predictions.	**A1.2.3.2.1** Estimate or calculate to make predictions based on a circle, line, bar graph, measure of central tendency, or other representation.	10.1, 10.2
	A1.2.3.2.2 Analyze data, make predictions, and/or answer questions based on displayed data (box-and- whisker plots, stem-and-leaf plots, scatter plots, measures of central tendency, or other representations).	10.3, 10.6
	A1.2.3.2.3 Make predictions using the equations or graphs of best-fit lines of scatter plots.	10.4
A1.2.3.3 Apply probability to practical situations.	**A1.2.3.3.1** Find probabilities for compound events (e.g., find probability of red and blue, find probability of red or blue) and represent as a fraction, decimal, or percent.	Prior grade level