

Standards Table: Algebra II Mathematics

SPIs: Focus Content	
Mathematical Processes	SPI 3103.1.3 Use technology tools to identify and describe patterns in data using non-linear and transcendental functions that approximate data as well as using those functions to solve contextual problems.
	SPI 3103.1.4 Use mathematical language, symbols, definitions, proofs and counterexamples correctly and precisely to effectively communicate reasoning in the process of solving problems via mathematical modeling with both linear and non-linear functions.
Algebra	SPI 3103.3.1 Add, subtract and multiply polynomials; divide a polynomial by a lower degree polynomial.
	SPI 3103.3.2 Solve quadratic equations and systems, and determine roots of a higher order polynomial.
	SPI 3103.3.3 Add, subtract, multiply, divide and simplify rational expressions including those with rational and negative exponents.
	SPI 3103.3.4 Use the formulas for the general term and summation of a finite arithmetic and both finite and infinite geometric series.
Data Analysis, Statistics and Probability	SPI 3103.5.3 Analyze patterns in a scatter-plot and describe relationships in both linear and non-linear data.
SPIs: Other Content	
Mathematical Processes	SPI 3103.1.1 Move flexibly between multiple representations (contextual, physical, written, verbal, iconic/pictorial, graphical, tabular, and symbolic) of non-linear and transcendental functions to solve problems, to model mathematical ideas, and to communicate solution strategies.
	SPI 3103.1.2 Recognize and describe errors in data collection and analysis as well as identifying representations of data as being accurate or misleading.
Number and Operations	SPI 3103.2.2 Compute with all real and complex numbers.
	SPI 3103.2.3 Use the number system, from real to complex, to solve equations and contextual problems.
Algebra	SPI 3103.3.5 Describe the domain and range of functions and articulate restrictions imposed either by the operations or by the contextual situations which the functions represent.

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	SPI 3103.3.7 Identify whether a function has an inverse, whether two functions are inverses of each other, and/or explain why their graphs are reflections over the line $y = x$.
	SPI 3103.3.8 Solve systems of three linear equations in three variables.
	SPI 3103.3.9 Graph the solution set of two or three linear or quadratic inequalities.
	SPI 3103.3.12 Interpret graphs that depict real-world phenomena.
	SPI 3103.3.13 Solve contextual problems using quadratic, rational, radical and exponential equations, finite geometric series or systems of equations.
Geometry and Measurement	SPI 3103.4.1 Exhibit knowledge of unit circle trigonometry.
	SPI 3103.4.2 Match graphs of basic trigonometric functions with their equations.
Data Analysis, Statistics and Probability	SPI 3103.5.1 Compute, compare and explain summary statistics for distributions of data including measures of center and spread.
	SPI 3103.5.2 Compare data sets using graphs and summary statistics.
	SPI 3103.5.4 Apply the characteristics of the normal distribution.
	SPI 3103.5.5 Determine differences between randomized experiments and observational studies.
	SPI 3103.5.7 Determine/recognize when the correlation coefficient measures goodness of fit.
	SPI 3103.5.8 Apply probability concepts such as conditional probability and independent events to calculate simple probability.
Dropped SPIs: These SPIs will not appear on the 2013-14 TCAP End of Course Exams	
Number and Operations	SPI 3103.2.1 Describe any number in the complex number system.
Algebra	SPI 3103.3.6 Combine functions (such as polynomial, rational, radical and absolute value expressions) by addition, subtraction, multiplication, division, or by composition and evaluate at specified values of their variables.

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	SPI 3103.3.10 Identify and/or graph a variety of functions and their transformations.
	SPI 3103.3.11 Graph conic sections (circles, parabolas, ellipses and hyperbolas) and understand the relationship between the standard form and the key characteristics of the graph.
	SPI 3103.3.14 Solve problems involving the binomial theorem and its connection to Pascal's Triangle, combinatorics, and probability.
Geometry and Measurement	SPI 3103.4.3 Describe and articulate the characteristics and parameters of parent trigonometric functions to solve contextual problems.
Data Analysis, Statistics and Probability	SPI 3103.5.6 Find the regression curve that best fits both linear and non-linear data (using technology such as a graphing calculator) and use it to make predictions.