

Spanish Fork High School

2014/2015 Math 1050 "I CAN" Statements

Unit 1: Equations, Inequalities, Coordinates & Graphs

- I can solve quadratic equations in various ways & model with quadratic equations
- I can perform operations and simplify expressions with complex numbers
- I can solve equations involving polynomials, radicals, and those that are quadratic in form
- I can solve linear and nonlinear inequalities
- I can solve absolute value equations and inequalities
- I can use the distance and midpoint formulas and graph points in the coordinate plane
- I can graph linear equations & equations of circles, find intercepts, and determine symmetry
- I can write equations of lines, including parallel & perpendicular lines

Unit 2: Functions

- I can recognize functions in the real world, work with function notation, & find domain and range
- I can represent functions verbally, algebraically, graphically, and numerically
- I can graph functions, including piecewise-defined functions and determine whether an equation defines a function
- I can get information about a function by looking at its graph
- I can find the average rate of change of a function and interpret it in real world situations
- I can graph functions using transformations
- I can perform operations on functions and find the composition of two functions
- I can determine if a function is one-to-one and find its inverse

Unit 3: Polynomial Functions

- I can express a quadratic function in different forms, find maximum and minimum values, and model with quadratic functions
- I can solve quadratic inequalities
- I can find domain, range, end behavior and zeros of a polynomial function
- I can find zeros and multiplicities and graph polynomial functions
- I can perform Polynomial Long Division and Synthetic Division
- I can find all zeros of a polynomial function
- I can maximize volume using polynomials
- I can find domain, range, end behavior, intercepts, and asymptotes of a rational function
- I can graph rational functions by hand
- I can solve rational equations
- I can solve polynomial and rational inequalities

Unit 4: Exponential and Logarithmic Functions

- I can graph exponential functions and identify domain, range, and asymptotes
- I can model real situations using exponential functions
- I can graph exponential functions with base “e”
- I can find exponential growth and decay rates
- I can convert between exponential and logarithmic form
- I can find the inverse of an exponential function and graph a logarithmic function
- I can use properties of logarithms to simplify a logarithmic expression
- I can solve exponential equations
- I can solve logarithmic equations
- I can solve problems involving finance, radioactive decay, and Newton’s Law of Cooling

Unit 5: Systems of Equations and Inequalities

- I can solve systems of equations graphically and algebraically by substitution or elimination
- I can solve systems of equations in several variables
- I can find the partial fraction decomposition of a rational expression
- I can graph the solution of a system of inequalities
- I can use Linear Programming to determine the optimal allocation of resources in real world situations

Unit 6: Matrices and Determinants

- I can solve a linear system using matrices
- I can determine whether two matrices are equal
- I can use addition, subtraction, and scalar multiplication of matrices and multiply matrices
- I can determine when two matrices are inverses of each other and find the inverse of a matrix
- I can solve a linear system by writing it as a matrix equation
- I can find the determinant of an $n \times n$ matrix
- I can use Cramer’s Rule to solve a linear system

Unit 7: Conic Sections

- I can find the vertex, focus, directrix and equation of a parabola and sketch its graph
- I can find the center, radius, and equation of a circle and sketch its graph
- I can find the center, vertices, foci, and equation of an ellipse and sketch its graph
- I can find the center, vertices, foci, asymptotes, and equation of a hyperbola and sketch its graph
- I can convert an equation between general and standard form and identify the type of conic

Unit 8: Sequences & Series

- I can determine if a sequence is arithmetic, geometric, or neither
- I can find the n th term and the n th partial sums of arithmetic and geometric sequences

- I can find the sum of an infinite geometric series, if possible
- I can use sigma notation to determine a sum and to find a sum
- I can expand powers of binomials using Pascal's triangle
- I can find binomial coefficients and expand powers of binomials using the Binomial Theorem