Math 1050 Objectives for Test #1                    **Sullivan, 7th edition**

       Solve equations which contain radicals or which are quadratic in form.
       Find the intercepts of the graph of an equation in two variables.
       Determine if the graph of an equation has symmetry with respect to the x-axis, the y-axis,
             or the origin.
       Graph equations in two variables.
       Understand and use function notation.
       Define the terms: function, domain, range.
       Find the domain of a given function.
       Find the average rate of change of a given function at a given value (difference quotient).
       Determine where a function is increasing, decreasing, or constant.
       Determine if a function is even, odd, or neither.
       Graph the "library of functions" from 3.4 and apply the transformations learned in the
             lab project.
       Graph piece-wise defined functions.
       Understand and use the notation for operations on functions.
       Construct mathematical models, determine their real world domain, use the model to
             analyze a problem.


Test 2 Objectives        Math 1050                    **Sullivan, 7th edition**

Find the intercepts, vertex, axis of symmetry, and graph of a quadratic function.
Set up and solve maximum/minimum applications problems.
Find the zeros of a polynomial function, determine their multiplicity, and predict graph behavior
       at each root (crossing or touching the x-axis).
Determine the positive and negative regions of a polynomial function, and the power function
       which the graph resembles for large values of x.
Find the domain, the intercepts, and the vertical, horizontal, and oblique asymptotes of a rational
       function.
Graph both polynomial and rational functions.
Solve polynomial and rational inequalities.
Determine whether $(x - c)$ is a factor of a polynomial function using the Remainder Theorem.
Use synthetic division to find the quotient and remainder when dividing a polynomial.
Find all the possible rational zeros of a polynomial function.
Find the possible number of positive and negative zeros of a function using
       Decartes' Rule of Signs.
Understand the principle of the intermediate value theorem.
Understand and use the conjugate pairs theorem.
Find the complex zeros (real and imaginary) of complex polynomial functions.

Test 3  Objectives        Math 1050                    **Sullivan, 7th edition**

Understand function composition and find the domain of a composite function.
Know the definition of a one-to-one function.
Find the inverse of a one-to-one function.
Find the domain and range of functions and their inverse functions.
Verify that two functions are inverses of one another.
Graph exponential and logarithmic functions.
Evaluate exponential and logarithmic functions at given input values.
Determine the domain of exponential and logarithmic functions.
Know and use the properties of logarithms (see page 448).
Solve logarithmic equations.
Solve exponential equations.
Know and use the formulas for simple interest, compound interest, and present value.
Solve problems involving exponential growth and decay.
Understand the logistic growth model and find the carrying capacity for a given equation.

Math 1050      Test #4 Objectives                    **Sullivan, 7th edition**

Use matrix row operations to solve systems of linear equations.
Be able to tell how many solutions a system has by observing it's augmented matrix in row echelon form.
Find the determinant of a 3 by 3 matrix by hand, find larger determinants with your calculator.
Solve a system of equations using Cramer's Rule.
Add and subtract matrices or scalar multiples of matrices.
Multiply  matrices.
Find the inverse of a 2 by 2 matrix by hand, or the inverse of a larger matrix using a calculator.
Solve matrix equations in the form AX = B using the inverse of A.
Find the partial fraction decomposition of rational expressions in the form P/Q where
        Q contains non-repeated linear factors
        Q contains repeated linear factors
        Q contains non-repeated quadratic factors
Know the definition of a sequence.
Given a sequence, list the first few terms or given the first few terms, determine the nth term.
Understand recursively defined sequences.
Understand and use summation notation.
For arithmetic sequences, find the nth term and the sum of the first n terms.
Given two terms of an arithmetic sequence, find the first term and common difference.
For geometric sequences, find the nth term and the sum of the first n terms.
Find the infinite sum of a geometric sequence.
Solve applications problems using sums of sequences.

Math 1050      Additional material required for final:          **Sullivan, 7th edition**

Know and be able to graph the equations for Circles, Parabolas, Ellipses, and Hyperbolas.
Work with Circles, Parabolas, Ellipses, and Hyperbolas with center (h,k).
Solved applied problems using Circles, Parabolas, Ellipses, and Hyperbolas.