Math 141 Test 3 Preparation

1. The test covers 11.1-11.10.
2. The test will be based on homework, class work, and class examples.
3. The following is a list of items that you need to **memorize**.

   a) The nth Term Test for Divergence
   b) Geometric series and the formula for the sum
   c) The p-series Test
   d) The Integral Test
   e) The Comparison Tests (both of them)
   f) The Alternating Series Test
   g) The Alternating Series Estimation Theorem
   h) Absolute Convergence Theorem
   i) The Ratio and Root Tests
   j) The definition of power series
   k) The definition of Taylor and Maclaurin Series
   l) The Maclaurin series for e^x, sinx, cosx and 1/(1-x)
   m) Any property, definition, or theorem needed to complete the homework successfully

4. A well prepared student should be able to…
   a) find the formula for the nth term of a sequence.
   b) determine whether or not a sequence converges and find the limit of a convergent sequence.
   c) determine whether or not a given series converges absolutely, conditionally, or not at all using one or more of the convergence tests or other technique.
   d) find the sum of a convergent geometric series or telescoping series.
   e) estimate the sum of a convergent alternating series using the Estimation Theorem.
   f) find the interval and radius of convergence of a given power series using the ratio or root tests.
   g) find the power series of a given function using the formula for the sum of an infinite geometric series.
   h) find the Taylor series of a given function from the definition and by using other known Taylor series.
   i) do algebra and calculus on the Taylor series of a given function.
   j) solve homework-like problems.