Math 141 Test 4 Preparation

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 (See Th. 3 p. 738).
   i) The Ratio and Root Tests.
   j) The definition of power series.
   k) The definitions of power series and Taylor Series.
   l) The Maclaurin series for e^x, sinx, cosx and 1/(1-x) (p. 768)
   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.
   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.