Problem Set 5 Calculus 2 Due 4/18/11

You are encouraged to work in groups of two to four on this assignment and make a single group submission. Each problem is worth 3 points for correct and clearly justified answers. An additional quality point will be awarded to submissions which are presented in a manner appropriate to good college-level work.

1. a) Show that $\sum_{n=1}^{\infty} \frac{1}{n(n+2)}$ converges.

   b) Find the sum of the series $\sum_{n=1}^{\infty} \frac{1}{n(n+2)}$ [Hint: Use partial fractions to rewrite $\frac{1}{n(n+2)}$ and then try writing the first several partial sums to see a pattern].

2. For what values of p does the series $\sum_{n=2}^{\infty} \frac{1}{n(\ln n)^p}$ converge?

3. Do #5 in the Chapter 11 Problems Plus on p. 761.