Problem Set 6   **Calculus 2**   **Due 4/17/09**

You are encouraged to work in groups of two to four on this assignment and make a single group submission. Each problem is worth 5 points. For full credit indicate clearly how you reached your answer. All work must be legible and submitted on clean paper without ragged edges.

1. Suppose that a certain experimental medication is to be administered at one-hour intervals in doses of 250mg. It is expected that 40% of the medication present in the body will be metabolized per hour. What happens to the amount of medication present in the body over time?

2. Find the sum of the series $\displaystyle\sum_{n=1}^{\infty} \frac{2}{n(n+2)}$.

3. Without using the Ratio Test, determine whether $\displaystyle\sum_{n=0}^{\infty} \frac{1}{n!}$ diverges or converges.

4. For which values of p is $\displaystyle\sum_{n=1}^{\infty} \frac{(-1)^n}{n^p}$ convergent?