Calculus II, Section K
Quiz # 3
September 10th, 2008

First Name : _____

Last Name : _____

1. Transform the first expression into the second

   (Explain all details!!)

$$\sum_{k=5}^{59} \frac{1}{k^2 - 16} \qquad\qquad \sum_{n=1}^{55} \frac{1}{n^2 + 8n}$$

2. Find the sum of the series

   (Beware of details!!)

$$\sum_{n=3}^{\infty} \frac{1}{n(n+1)} =$$

3. **Show** that the following series diverges

$$\sum_{n=1}^{\infty} \left(1 + \frac{3}{n^2}\right)^n$$

4. Determine whether this series is convergent or not?

   (Indicates the criterions used !!)

$$\sum \frac{4k \ln k + 1}{\sqrt{k^5 + 3}}$$

5. For which values of α is the following series convergent or divergent?

   (Indicates the criterions used !!)

$$\sum_{k=1}^{\infty} \frac{1}{\sqrt{k^2 + 1} \cdot \ln^\alpha (k+1)}$$