

GEORGIA TECH

SCHOOL OF MATHEMATICS

MATH 1502

## CALCULUS II, SECTION D

## Quiz # 3

September 10th, 2008

First Name : -----

Last Name : -----

1. Transform the first expression into the second

(Explain all details!!)

$$\sum_{k=3}^{41} \frac{1}{k^2 - 4}$$

$$\sum_{n=1}^{39} \frac{1}{n^2 + 4n}$$

2. Find the sum of the series

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

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

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

4. Determine whether this series is convergent or not?

*(Indicates the criterions used!!)*

$$\sum \frac{4k-1}{\sqrt{k^4+2}}$$

5. For which values of  $\beta$  is the following series convergent or divergent?

*(Indicates the criterions used!!)*

$$\sum_{k=1}^{\infty} \frac{\ln k}{k^\beta}$$