

GEORGIA TECH

SCHOOL OF MATHEMATICS

MATH 1502

CALCULUS II, SECTION D

Quiz # 4

September 17th, 2008

First Name : -----

Last Name : -----

1. Determine whether the following series converge

(Indicate which criterion is used)

$$\sum \frac{k!}{k^k}$$

2. Indicate whether the following series is absolutely convergent or conditionally convergent. *(Indicate which criterion is used and check carefully that the conditions for this criterion are satisfied!)*

$$\sum \frac{(-1)^k}{k+1} =$$

3. Find the radius of convergence of

$$\sum_{k=1}^{\infty} \frac{k!}{k^k} x^k$$

4. Give the power series representation of $f(x) = (1 - 2x)^{-2}$

(Hint : see f as the derivative of a known series)

$$f(x) =$$

5. Give the power series representation of

$$\int_0^x \frac{\sin t}{t} dt$$