

GEORGIA TECH

SCHOOL OF MATHEMATICS

MATH 1502

## CALCULUS II, SECTION K

## Quiz # 2

*September 3rd, 2008*

First Name : -----

Last Name : -----

1. Compute the following limits (*what method are you using?*)

$$\lim_{x \rightarrow 1} \frac{x^{1/2} - x^{1/4}}{(x^3 - 1)} =$$

$$\lim_{x \rightarrow +\infty} x \sin(23/x) =$$

2. Compute the improper integral

$$\int_0^{+2} \frac{dx}{x^{5/6}} =$$

3. Is the following integral convergent or not?

$$\int_1^{+\infty} \frac{dx \ln^2 x}{1+x}$$

4. For which values of  $\beta$  is the following integral convergent or divergent?

$$\int_1^{\infty} \frac{dx}{x^{\beta}}$$