Georgia Tech

School of Mathematics

Math 1502

Calculus II, Section D
Quiz # 1

September 1st 2010

First Name : _____

Last Name : _____

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

$$\lim_{x \to 3} \frac{\sqrt{x+1} - 2}{x^3 - 7x - 6} =$$

$$\lim_{x \to 0} \frac{\cosh(x) - 1}{x^2} =$$

$$\lim_{n \to \infty} \left(2^n + 7^n\right)^{1/n} =$$

2. Is the following integral convergent or not ? (*give the method of proof*)

$$\int_1^{+\infty} \frac{1}{(1+3\sqrt{x})^2}\, dx$$

3. Give the set of values of α for which the following integral converges ?

$$\int_0^{\infty} \frac{dx}{(1+13x+x^5)^\alpha}$$