

Name: \_\_\_\_\_

**Math 125 Quiz 6**

June 9, 2006

1. Approximate  $\int_4^1 \frac{e^x}{x} dx$  with the Trapezoid Rule and Simpson's Rule for  $n = 6$  subintervals (Find  $T_6$  and  $S_6$ ).

2. Determine if the following integrals is convergent or divergent. Evaluate if it is convergent.

(a)  $\int_1^\infty \frac{(\ln x)^2}{x^2} dx$

(b)  $\int_{1/4}^1 \frac{1}{\sqrt{4t-1}} dt$

3. Use the comparison test to determine if the following integral is convergent:  $\int_1^{\infty} \frac{\cos^2 x}{x + e^x} dx$