

**Math 166: Honors Calculus II**

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

**Quiz 2** *Feb. 2, 1995*

1. a) Define the natural logarithm function,  $\log(x)$ .

b) Prove that  $\log(ab) = \log(a) + \log(b)$  for  $a, b > 0$ .

c) Define the natural exponential function,  $\exp(x)$ .

d) Define  $a^x$  for  $a > 0$  and  $x \in \mathbb{R}$ .

2. Compute the following integrals. (Justify your answers.)

a)  $\int \tan(x) dx$

b)  $\int x \log^2(x) dx$

c)  $\int x 2^{-3x^2} dx$