

**Math 166: Honors Calculus II**

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

**Quiz 6** *Mar. 9, 1995*

1. a) Define what the notation  $f(x) = o(g(x))$  as  $x \rightarrow a$  means.

b) Prove that  $\frac{1}{1+g(x)} = 1 - g(x) + o(g(x))$ , if  $\lim_{x \rightarrow a} g(x) = 0$ .

2. a) Show that  $\frac{\log(1 + cx^2 + o(x^2))}{x^2} = c + o(1)$ .

b) Show that  $\lim_{x \rightarrow 0} (\cos(x))^{a/x^2} = 1/\sqrt{e^a}$ .