Math 166: Honors Calculus II Name:_____
Quiz 7 *March 23, 2000*

1. Define precisely $\lim_{x\to\infty} f(x) = L$.

2. Prove that if $\lim_{x\to a} \dfrac{f(x)}{g(x)} = \infty$ then $\lim_{x\to a} \dfrac{g(x)}{f(x)} = 0$.

3. Compute the limits:

a) $\lim_{x \to 0} \dfrac{x\cos(x) - \sin(x)}{x^3}$

b) $\lim_{x \to \infty} x^4(e^{1/x^2} - 1) - x^2$

c) $\lim_{x \to \infty} \left(\dfrac{x+1}{x-1}\right)^x$