9/10/2003 MA 171 Calculus A Name:_____
Dr. Lunsford Quiz 4 (20 Points Total)

Neatly show ALL of your work and CLEARLY indicate your answers. Use the back of the page if necessary.

I. For each of the following limits, determine if the limit exists as a number, exists in the infinite sense, or does not exist. If the limit exists find its value. You must show at least one intermediate step to receive full credit. (4 points each – 16 total)

(a) $\lim_{h\to -\infty} \dfrac{3-4h^7+h^4}{6h^7-3h+1}$

(b) $\lim_{x\to 0^+} \dfrac{\dfrac{1}{3+x}-\dfrac{1}{3}}{x}$

(c) $\lim_{\theta\to \infty} \dfrac{\sin 3\theta}{\theta}$

(d) $\lim_{t\to -\infty} \dfrac{1-2t}{\sqrt{16t^2+5}}$

II. Given the function $f(x)=\begin{cases} 1+x^2 & ,x\le 0 \\ 2-x & ,0<x\le 2 \\ (x-2)^2 & ,x>2 \end{cases}$, determine if f is continuous at $x=2$.

Neatly show all your work and clearly justify your answer. (4 points)