

9/10/2003
Dr. Lunsford

MA 171 Calculus A
Quiz 3

Name: _____
(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. (3 points each – 15 total)

(a) $\lim_{h \rightarrow 0} \frac{(2+h)^2 - 4}{h}$

(b) $\lim_{x \rightarrow 4^+} \frac{x^2 - 100}{x - 4}$

(c) $\lim_{\theta \rightarrow \pi/2} \frac{\sin 3\theta}{\theta}$

(d) $\lim_{x \rightarrow -1^-} \frac{x^2 - 1}{2 + x - x^2}$

(e) $\lim_{x \rightarrow -3^+} \sqrt{x^2 - 9}$

II. Given the function $f(x) = \begin{cases} x & , x \leq -2 \\ x^2 - 6 & , -2 < x \leq 2 \\ x + 1 & , x > 2 \end{cases}$, find the indicated limits. (5 points)

$\lim_{x \rightarrow 3/2} f(x)$

$\lim_{x \rightarrow 2} f(x)$