2/15/2006 MATH261 Calculus I Name:_____
Dr. Lunsford Quiz 4 (20 Points Total)

You must show all work on this quiz for full credit.

1. Given the function $f(x)=\begin{cases}\dfrac{x^2-2x}{4-x^2}, & x<2\\ -\dfrac{1}{2}, & x\geq 2\end{cases}$ determine if f is continuous at $x=2$. (4 points)

2. Use the function $f(x)=\dfrac{x-2}{x^2-5x+6}$ to answer the following questions (7 points total):

(a) Find the equation of all vertical asymptotes of f. Clearly indicate your answers. (4 points)

(b) Find all horizontal asymptotes of f. Clearly indicate your answers. (3 points)

3. Find the indicated limits. If the limit DNE as a number please determine if it exists in the infinite sense. (3 points each, 9 total)

(a) $\lim\limits_{w\to 1^-}\dfrac{w-2}{w-1}$

(b) $\lim\limits_{\theta\to\pi^+}\dfrac{\theta}{\sin(\theta)}$

(c) $\lim\limits_{x\to-\infty}3x^3-4x^6-11x^7$