

Math 180
Fall, 2008

Name _____

Homework #2
Due Wednesday, September 10
No late papers accepted! No excuses!

1. Find each of the following limits analytically.

a) $\lim_{x \rightarrow 2} \frac{\sqrt{x^2 + 12} - 4}{x - 2}$

b) $\lim_{x \rightarrow 0} \frac{\tan(2x)}{\tan(5x)}$

$$\text{c) } \lim_{x \rightarrow 0} \frac{\frac{1}{2+x} - \frac{1}{2}}{x}$$

4. Let $f(x) = -x^2 + 3x - 4$. Find $\lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$