

Math 180  
Winter, 2009

Name \_\_\_\_\_

Homework #4  
Due Monday, January 12  
No late papers accepted!

Evaluate the following limits analytically. Positive or negative infinity is an acceptable answer. **3 points each**

a)  $\lim_{x \rightarrow 2} \frac{3x^2 - x - 10}{x^2 - x - 2}$

b)  $\lim_{x \rightarrow 7^-} \frac{|8x - 56|}{x - 7}$

c)  $\lim_{x \rightarrow 0} \frac{\sqrt{x+4} - 2}{x}$

d)  $\lim_{x \rightarrow 0} \frac{\frac{1}{x+3} - \frac{1}{3}}{x}$

2. Let  $f(x) = \sqrt{3-5x}$ . Find the derivative using the limit definition