

Name: \_\_\_\_\_

**Math 124 Worksheet #1**  
**September 28, 2007**

1. Sketch a possible graph of a function  $f$  that satisfies the following conditions.

$$f(1) = 2, \quad \lim_{x \rightarrow 1} f(x) = 4, \quad \lim_{x \rightarrow 5^-} f(x) = 0, \quad \lim_{x \rightarrow 5^+} f(x) = -3$$

2. Evaluate the following.

(a)  $\lim_{t \rightarrow 1^+} \frac{3}{1-t}$

(e)  $\lim_{x \rightarrow -1} \frac{x-3}{3x^2+3}$

(b)  $\lim_{t \rightarrow 1^-} \frac{3}{1-t}$

(f)  $\lim_{t \rightarrow 3} \frac{2t^2+2t-24}{t^2-3t}$

(c)  $\lim_{x \rightarrow \sqrt{2}} 2x^6 - 3$

(g)  $\lim_{x \rightarrow 0^-} \frac{1}{|x|}$

(d)  $\lim_{t \rightarrow 1} (t^2 + 1)(3t^3 - 4t + 2)$

(h)  $\lim_{x \rightarrow 0} \frac{1}{|x|}$