Math 1A: Quiz 2 Name: _____

GSI: Theo Johnson-Freyd Wednesday, 4 February 2008

You must always justify your answers. This means: show your work, show it neatly, and when in doubt, use words (and pictures!) to explain your reasoning. No justification = no points.

1. (4 pts) Evaluate the following limit, or explain why it doesn't exist:

$$\lim_{t \to 0} \left(\frac{1}{t} - \frac{1}{t^2 + 1} \right)$$

2. (6 pts) Is the function $f(t) = \dfrac{1}{t} - \dfrac{1}{t^2 + 1}$ continuous at $t = 0$? Is it continuous at $t = 1$? At $t = 2$? At each of these values of t, if $f(t)$ is not continuous, does it have a removable discontinuity, a jump discontinuity, an infinite discontinuity, or an essential discontinuity?

3. (bonus) On the back of this page, explain a concept from this course that you feel like you completely understand, but that you didn't understand a week ago.