

MTH 132.12 Quiz 2
Friday 28 January 2011

Name:

Show *all* your work. Points will be deducted for incomplete work. No calculators are allowed.

1. For each statement below, indicate whether it is true or false. Give a short explanation.

(a) $\lim_{x \rightarrow 0} \frac{1}{x} = \infty$

(b) $\lim_{x \rightarrow 1} \frac{\sin(x^2 - 1)}{x^2 - 1} = 1$

(c) $\lim_{x \rightarrow \infty} \frac{\sin(x^2 - 1)}{x^2 - 1} = 1$

2. Consider the function $h(t) = \begin{cases} \frac{t^2 - 3t - 4}{(t-4)(t+3)} & \text{if } t \neq 4, -3 \\ 12 & \text{if } t = 4 \\ 1 & \text{if } t = -3 \end{cases}$

(a) What are the discontinuities of $h(t)$? Show your work.

(b) Which of the discontinuities of $h(t)$ are removable? Explain.