

Student Name: _____ Student Number: _____

Serial No.: _____

Instructor: M. Z. Abu-Sbeih

Math - 132.1

Quiz No. 1

Date: 9-2-2013.

Problem 1: (12 points) Consider the function $f(x) = 2 - \frac{x}{x^2 - x}$.

(a) If it exists, find the limit. If it does not exist, show why. Use the symbols ∞ or $-\infty$ as appropriate.

(i) $\lim_{x \rightarrow 0} f(x)$

(ii) $\lim_{x \rightarrow 1} f(x)$

(iii) $\lim_{x \rightarrow \infty} f(x)$

(b) Find all values of x at which $f(x)$ is discontinuous.

Problem 2: (4 points) Find all values of C which will make the following function continuous.

$$f(x) = \begin{cases} x - C + 4 & \text{if } x \leq 1, \\ x^2 + C & \text{if } x > 1. \end{cases}$$

Problem 3: (4 points) Find all points of discontinuity of the function $f(x) = \frac{x^2 - 3x - 10}{x^2 - 4}$ and identify the type of each one.