

King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
MATH 101 – Quiz 2 **Term 082**

NAME: _____ ID: _____ Section: _____

Exercise 1

Prove $\lim_{x \rightarrow 3} (7 - 4x) = -5$ by using the ε, δ definition of limit.

Exercise 2 (justify your answers)

$$\text{Let } f(x) = \begin{cases} x+1 & , \quad x \leq 1 \\ 1/x & , \quad 1 < x < 3 \\ \sqrt{x-3} & , \quad x \geq 3 \end{cases}$$

(a) Find $\lim_{x \rightarrow 1} f(x)$

(b) Find $\lim_{x \rightarrow 3} f(x)$

(c) Find all numbers at which f is **discontinuous**

(d) Find the numbers at which f is **discontinuous** but continuous from the left

(e) Find the numbers at which f is **discontinuous** but continuous from the right