

King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
MATH 101 – Quiz 1

Term 081

NAME: _____ ID: _____

Exercise 1

$$\text{Let } f(x) = \begin{cases} \frac{1}{x} + \frac{\pi}{4} & \text{if } x < \frac{-4}{\pi} \\ x^4 \cos \frac{2}{x} & \text{if } \frac{-4}{\pi} \leq x < 0 \\ \frac{1}{x} - \frac{1}{x\sqrt{1+x}} & \text{if } x > 0 \end{cases}$$

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

(b) Find $\lim_{x \rightarrow \frac{-4}{\pi}} f(x)$

(c) Find $\lim_{x \rightarrow 0^-} f(x)$

(d) Find $\lim_{x \rightarrow 0^+} f(x)$

(e) Find $\lim_{x \rightarrow 0} f(x)$