Department of Mathematics and Statistics KFUPM
MATH 101-09 Quiz#1, Time: 40 mins

Student's Name: _____ ID: _____Section No: _____

Q.No.1:- (**5 points**) Sketch the graph of an example of a function f that satisfies all of the given conditions.

$\lim_{x\to 0^-} f(x) = 2$ $\lim_{x\to 0^+} f(x) = 0$ $f(0) = 2$

$\lim_{x\to 4^-} f(x) = 3$ $\lim_{x\to 4^+} f(x) = 3$ $f(4) = 1$

Q.No.2:- Find the following limit and give reason(s) for every step.

$$\lim_{x \to 2^+} \left[\frac{x^2 - 2x - 8}{x^2 - 5x + 6} \right]$$

Final Answer (**1 point**): _____

Work Shown (**4 points**):

Q.No.3:- Evaluate the limit, if it exists. Justify each step by indicating the appropriate Limit Law(s).

$$\lim_{x \to -1} \frac{2x^2 + 3x + 1}{x^2 - 2x - 3}$$

Final Answer (**1 point**): _____

Work Shown (**4 points**):

Q.No.4:- Evaluate the limit, if it exists. Justify each step by indicating the appropriate Limit Law(s).

$$\lim_{h\to 0} \frac{(3+h)^{-1} - 3^{-1}}{h}$$

Final Answer (**1 point**): _____

Work Shown (**4 points**):

Q.No.5:- Find a number δ such that

if $|x-4| < \delta$ then $\left|\sqrt{x}-2\right| < 0.4$

Final Answer (**1 point**): _____

Work Shown (**4 points**):

With Best Wishes