Department of Mathematics and Statistics KFUPM
MATH 101-25 Quiz#1, Time: 20 mins

Student's Name: _____ ID: _____

Q.No.1:- For the function $y = f(x) = \frac{2}{\sqrt{x}}$, $x > 0$ find a number $\delta > 0$ such that:

If $0 < |x - 1| < \delta$ then $|f(x) - 2| < \frac{1}{2}$

Sol:

Q.No.2:- Let

$$f(y) = \begin{cases} a + x, & x < -1 \\ x^2 & -1 \leq x \leq 1 \\ b - x, & x > 1 \end{cases}$$

Find all values of a and b such that $\lim_{x \to -1} f(x)$ exists and $\lim_{x \to 1} f(x)$ does not exist.

Sol: