King Fahd University of Petroleum and Minerals
Faculty of Science – Math Prep Year program
Math 002 -042
Quiz #1

Name: Sr#:   ID: Sec.:

Question1

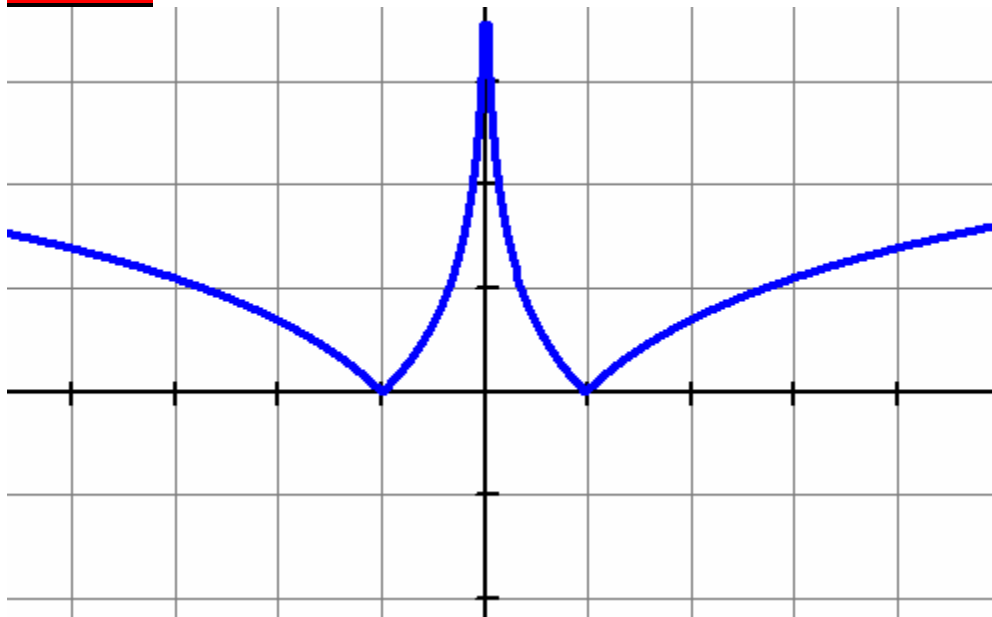If $\log_a 2 = \dfrac{2}{3}$, then find the value of $\log_8 a$

Solution:

$$\log_a 2 = \frac{\log 2}{\log a} = \frac{2}{3} \Rightarrow \log a = \frac{3}{2}\log 2$$

$$\therefore \log_8 a = \frac{\log a}{\log 8} = \frac{\frac{3}{2}\log 2}{\log 2^3} = \frac{\frac{3}{2}\log 2}{3\log 2} = \frac{1}{2}$$

Question2

If $f(x) = \left| \ln|x-1| \right|$, then determine the interval(s) where $f(x)$ is increasing.

Solution:

Hence $f(x)$ is increasing on : $[-1,0) \cup [1,\infty)$