KFUPM | Term 161 | Date: 5/10/2016

Mathematics & Statistics | MATH 101 | Duration: 20 minutes

Quiz# 1 A

Name: | ID #: | Section:

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1. If $f(x)=\begin{cases} \frac{1}{|x|}+\frac{1}{x} & , \quad x<0 \\ 3 & , \quad x=0 \\ \left[\!\left[\frac{6}{2+x}\right]\!\right] & , 0<x<2 \\ \frac{\sqrt{x^2-5}-2}{x-3} & , \quad x>2 \end{cases}$ then find each of the following:

   a. $\lim_{x\to 0^-} f(x)$

   b. $\lim_{x\to 1} f(x)$

   c. $\lim_{x\to 3} f(x)$

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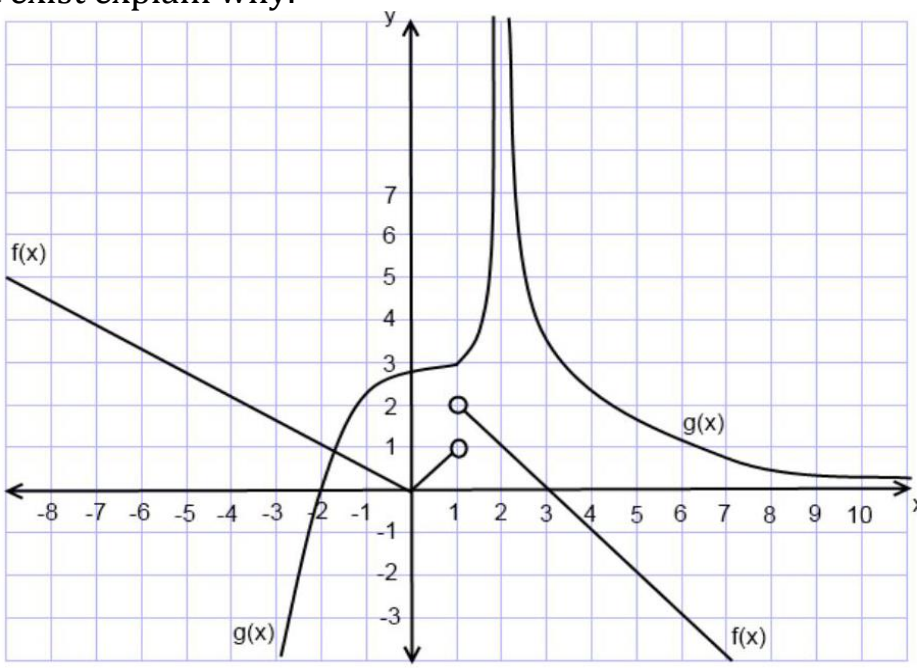
2. Let $f(x)=\frac{x^2-1}{x(x-2)+1}$. Use limits to find all vertical asymptotes of the graph of f(x). (Justify your answer)

3. Find $\lim_{x\to 0} x^2 e^{\sin(\frac{\pi}{x})}$

4. Find $\lim_{t\to 1} \frac{sin(t^3-1)}{3t^2-3}$

5. Using the graph below, evaluate the following limit that follow (if it exists). If it is does not exist explain why.



$$\lim_{x\to -2} \frac{3f(x) - g(x)}{3 + g(x)}$$