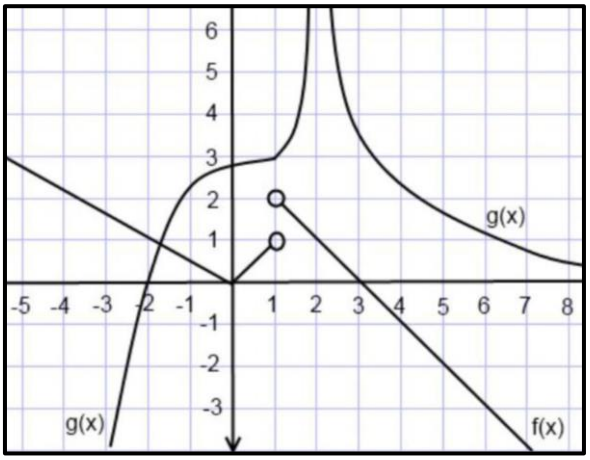
King **F**ahd **U**niversity for **P**etroleum and **M**inerals
Department of Mathematics & Statistics
Term 171 Math 101 (25) Quiz#1 (2.2, and 2.3)
Family name: S.r#

Q1. Use the graph below to find each limit if it exists and explain if it does not.



i. $\lim_{x\to 1^+}(f-g)$

ii. $\lim_{x\to 3^-}(\frac{2-x}{f})$

iii. $\lim_{x\to 1}[\![\, g(x) \,]\!]$ (Where $[\![y]\!]$ is the greatest integer less than or equal to y)

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Q. If $f(x)=\begin{cases}\dfrac{x}{x-1} & ,\text{if} \quad x<2 \\ \dfrac{1}{x+2} & ,\text{if} \quad x>2\end{cases}$. Find the limit if it exists and explain if it does not.

i. $\lim\limits_{x\to -1^+} f(x)$

ii. $\lim\limits_{x\to 2^+}\left[\!\left[4\cdot f \right]\!\right]$, where $\left[\!\left[y \right]\!\right]$ is the greatest integer less than or equal to y.

iii. $\lim\limits_{x\to 2}\dfrac{2-\sqrt{6-x}}{\sqrt{x^2-3}-1}$