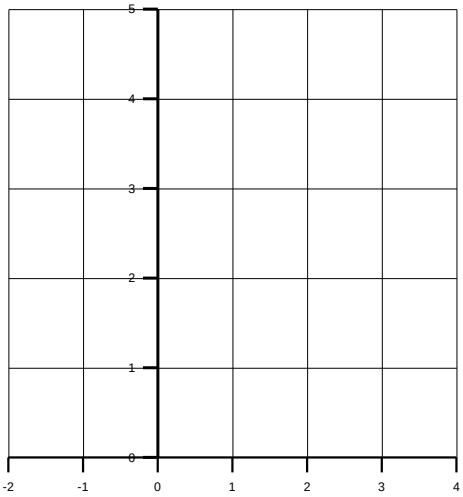
King Fahd University of Petroleum & Minerals
Department of Mathematics and Statistics
(Semester 142) Math 101 Quiz # 1

Name: _____ I.D. # _____ Sr. # ___

1. Given $f(x)=\begin{cases} x^2+1 & \text{if } x<1 \\ (x-2)^2 & \text{if } x\geq 1 \end{cases}$,

   Find $\lim\limits_{x\to 1^-} f(x)$, *and* $\lim\limits_{x\to 1^+} f(x)$. Does $\lim\limits_{x\to 1} f(x)$ exist? Sketch the graph of $f(x)$.



2. Evaluate $\lim\limits_{x\to 0^-}\left(\dfrac{1}{x}-\dfrac{1}{|x|}\right)$.

3. Evaluate $\lim\limits_{x\to -4}\dfrac{\sqrt{x^2+9}-5}{x+4}$.