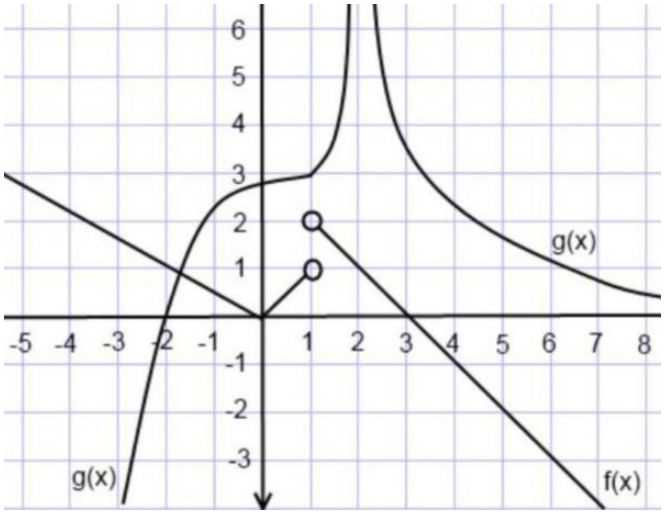
Math 101-172-Sec.11
Quiz #1

Name: **ID:** **SR:**

Question1: Use the graph to find the given limit if exists. Explain why?

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



b. $\lim_{x\to -2} (f(x) - g(x))$

c. $\lim_{x\to 2} g(x)$

d. $\lim_{x\to 3^-} \frac{2-x}{f}$

Question2: let Find $\lim_{x\to 0}\left(\frac{1}{x\sqrt{x+1}}-\frac{1}{x}\right)$ if exists.

Question3: Sketch the graph of an example of a function $f(x)$ that satisfies the following conditions:

$\lim_{x\to 3^+} f(x)=4,\ \lim_{x\to 3^-} f(x)=2,\ \lim_{x\to -2} f(x)=2, f(3)=3, f(-2)=1.$

Question3. Use the derivative definition to find $f'(a)$ for $f(x) = \frac{4}{\sqrt{1-x}}$

Question4: Find $f'(x)$ for the function $f(x) = \begin{cases} x^2 + 1 & if\ x \geq 2 \\ 4x - 4 & if\ x < 2 \end{cases}$ at all points in the domain. (Use derivative definition).