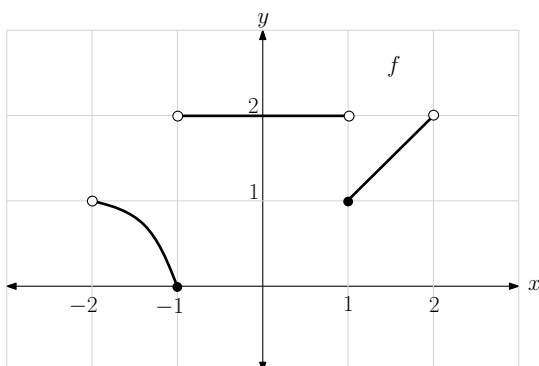Math 201 - Quiz #2   Name: _____

1. Use the graph of the given function $y = f(x)$ below to compute the following limits (if they exist):

(a) $\lim\limits_{x \to -1^-} f(x) =$ [____]

(b) $\lim\limits_{x \to -1^+} f(x) =$ [____]

(c) $\lim\limits_{x \to -1} f(x) =$ [____]

(d) $\lim\limits_{x \to 1^-} f(x) =$ [____]

(e) $\lim\limits_{x \to 1^+} f(x) =$ [____]

(f) $\lim\limits_{x \to 1} f(x) =$ [____]

2. (a) $\lim\limits_{x \to -3^-} \dfrac{x+2}{x+3} =$ [____]

(b) Part (a) shows that the function $f(x) = \dfrac{x+2}{x+3}$ has a vertical asymptote at $x =$ [____]

3. **Pick ONE of the following (please circle which one you will solve).** Otherwise, I will grade the first one you work on. You must show work on this problem.

(a) $\lim\limits_{x \to 2} \dfrac{x^2 - 4}{x^2 + x - 6}$

(b) $\lim\limits_{x \to 7} \dfrac{\sqrt{x+2} - 3}{x - 7}$

(c) $\lim\limits_{x \to -4} \dfrac{\dfrac{1}{4} + \dfrac{1}{x}}{4 + x}$

Please put your final answer in this box $\longrightarrow$ [____]