Math 241 Fall 2018 Professor MG
Classwork 1   Name: _____

Show all work and circle/box your final answer. All answers must be simplified unless stated
otherwise.

1. (*0 points*) Find the following limits:

(a) $\lim\limits_{x \to 2} \dfrac{3x^2 - x - 10}{x^2 - 4}$

(b) $\lim\limits_{x \to 6^-} \dfrac{|x - 6|}{x - 6}$

(c) $\lim\limits_{x \to 0} \dfrac{\sqrt{x^2 + 9} - 3}{x^2}$

2. (*0 points*) Evaluate the following limits for $f(x)$

$$f(x) = \begin{cases} x^2 - 3x + 4 & x \leq 1 \\ x + 1 & 1 < x \leq 3 \\ x^2 - 3x + 4 & x > 3 \end{cases}$$

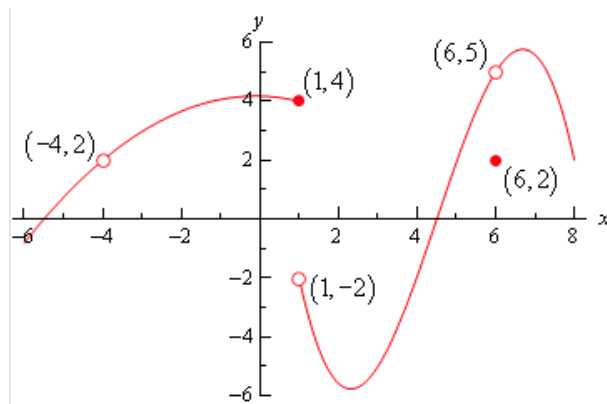(a) $\lim\limits_{x \to 1^-} f(x)$

(b) $\lim\limits_{x \to 1^+} f(x)$

(c) $\lim\limits_{x \to 1} f(x)$

(d) $\lim\limits_{x \to 3^-} f(x)$

(e) $\lim\limits_{x \to 3^+} f(x)$

(f) $\lim\limits_{x \to 3} f(x)$

3. (*0 points*) Using the graph of $f(x)$ below, find the following limits:

(a) $\lim\limits_{x \to 1^+} f(x)$

(b) $\lim\limits_{x \to -4} f(x)$

(c) $\lim\limits_{x \to 6} f(x)$