Serial No.:_____ Student Name:_____ Student Number: _____

Instructor: M. Z. Abu-Sbeih Math 101- Q1 Date: 12-2-2018

SHOW ALL YOUR WORK. NO CREDITS FOR ANSWERES WITHOUT JUSTIFICATIONS

Show all your work. NO credits for answers not supported by work.

(1) (6 points each) Evaluate the limit if it exists. If it does not exist, explain why. Use the symbols ∞ or $-\infty$ as appropriate.

a. $\lim_{x \to 2} \left(x + -x \right)$

b. $\lim_{t \to 0} \dfrac{t}{\sqrt{4-t}-2}$

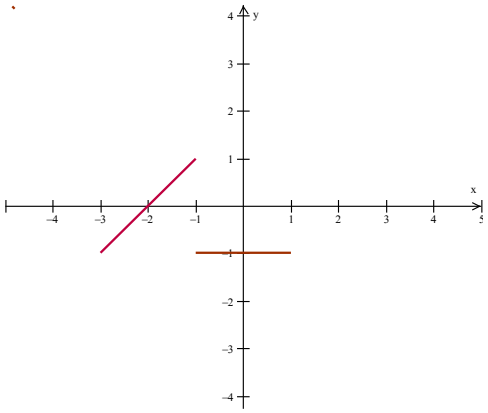
c. $\lim_{x \to 1} (x^2 - 2x + 1) \cos \dfrac{1}{x-1}$

d. $\lim_{x \to 5} \dfrac{3x-15}{\sqrt{x^2-10x+25}}$

(2) (8 points) Using the definition of the limit $\lim_{x \to 3} \sqrt{x+1} = 2$, find the largest δ which corresponds to $\in = 0.1$

(3) (8 points) The graph of the function $f(x)$ is given in the figure. Find

a) $\lim_{x \to -1^-} f(x+2)$



b) $\lim_{x \to -1^-} f(x^2)$