Name and surname:

U number:

Calculus I - MAC 2311 - Section 001

Quiz 2

01/24/2018

Instructions: The total number of points of this quiz is 10. You will get an extra point if you solve correctly the last exercise.

1) [7.5 points] Compute the following limits. Show all your work and state any special limits used.

a) $\lim_{x \to -3} \dfrac{x^2 + 6x + 9}{x^2 + 2x - 3} =$

b) $\lim_{t \to 2} \dfrac{t^2 - 2t}{\sqrt{2t} - 2} =$

c) $\lim_{\theta \to 0} \dfrac{\sin(2018\theta)}{\theta} =$

2) [2.5 points] Give the definition of a function which is continuous at a number a.

3) [Bonus] A student says:

The function

$$f(x) = \begin{cases} \cos(\pi x), & \text{when } x \leq 1 \\ -\sin\left(\frac{\pi}{2}x\right) & \text{when } x > 1 \end{cases}$$

is discontinuous at $x = 1$ *because* $x = 1$ *is a "breaking point" for* f.

Do you agree or disagree with the student? Explain your answer.