MATH-241 Created by Pierre-O. Parisé
Worksheet 04 Fall 2022

Last name: _____
First name: _____
Section: _____

Question:	1	2	Total
Points:	10	10	20
Score:			

Instructions: You must answer all the questions below and give your solutions to the TA at the end of the recitation. Write your solutions directly on the worksheet. Late worksheet will not be accepted.

Question 1 **(10 pts)**

Let $f(x) = x^2 + x$.

(a) (8 points) Using the definition of the derivative with the limit, find the slope of the tangent line to the graph of $f(x)$ at the point $(1, 2)$.

(b) (2 points) Find the equation of the tangent line to the graph of $f(x)$ at the point $(1, 2)$.

Question 2 **(10 pts)**

State if the derivative of the given function $f(x)$ exists at the given number a. Explain why the derivative doesn't exist.

(a) (5 points) $f(x) = |x - 1|$ and $a = 1$.

(b) (5 points) $f(x) = \begin{cases} 0 & \text{, if } x = 0 \\ 1/x^2 & \text{, if } x \neq 0 \end{cases}$ and $a = 0$.