Ahsanullah University of Science & Technology
Department of Computer Science & Engineering
Title: Soft Computing (CSE 4237)

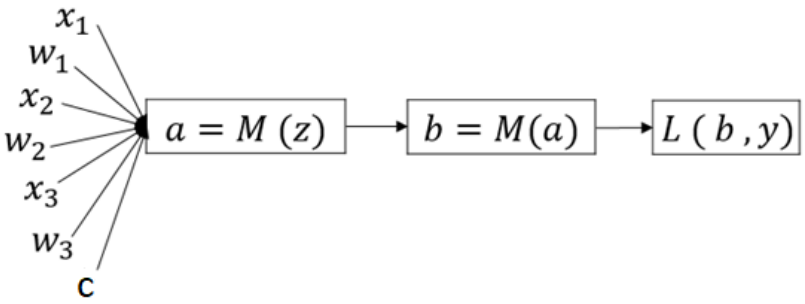
Assignment #1

Instructions:

1. Put a cover page at the top and write student name, student ID, course name, course ID, submission date, and signature.
2. Answer script should be handwritten on A4 white paper.
3. Write down the page number at the bottom of every page of the answer script.
4. Put your signature on top of every page of the answer script.
5. Before uploading rename the PDF file as
   a. ***StudentID_Assignment#1***
   eg. 160204001_Assignment#1.pdf

Question:

Given $z = w^T x + c$, find out the derivatives of the parameters w_1,w_2, w_3, and c for the following two settings. Apply chain rule where necessary and show complete derivations of each step.



i) M = *tanh* activation function and ***L*** = MSE Loss Function.
ii) M = Leaky *ReLU* activation function and ***L*** = Cross Entropy Loss Function.
