

Homework 8

Instructions

This homework contains **1** concept and **4** programming questions. In MS word or a similar text editor, write down the problem number and your answer for each problem. Combine all answers for concept questions in a single PDF file. Export/print the Jupyter notebook as a PDF file including the code you implemented and the outputs of the program. Make sure all plots and outputs are visible in the PDF.

Combine all answers into a single PDF named `andrewID_hw8.pdf` and submit it to Gradescope before the due date. Refer to the syllabus for late homework policy. Please assign each question a page by using the “Assign Questions and Pages” feature in Gradescope.

Here is a breakdown of the points for programming questions:

Question	Points
Concept 1	12
M8-L1-P1	12
M8-L2-P1	12
M8-L2-P2	12
M8-HW1	72
Total	120
Bonus	6

Problem 1

Consider the following network, with $x_0 = 2$, $w_1 = -1$, $w_2 = 3$, $w_3 = 7$, and linear (identity) activation functions.

Compute $\partial L / \partial w_3$, $\partial L / \partial w_2$, $\partial L / \partial w_1$ provided that $t = -40$

$$L = \frac{1}{2} e^T e$$

