**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 x0 = 2, w1 = -1, w2= 3, w3 = 7, and linear (identity) activation functions.

Compute ∂L/∂w3, ∂L/∂w2, ∂L/∂w1 provided that t = -40

L=

A circle with arrows and a circle with text

Description automatically generated with medium confidence

