

## Problem Set 1 - Linear Regression

There is a system represented as  $y = a_1x_1 + a_2x_2 + a_3x_3$ . Our goal is to find  $A = [a_1, a_2, a_3]$  using the given 10,000 observations of  $(x_1, x_2, x_3, y)$ . Find the best  $A$  using two different approaches: (1) solving for a closed form solution, (2) **Gradient descent**. Describe pros and cons of each approach that we observe during the experiment. For this experiment, you are allowed to use only Python language with **Numpy** package.