BVA 507E Homework 3
Due Date December 29 Friday 23:59

Consider the data set Exam3DataSet provided in the Ninova. The dataset includes x (that represent the single feature) and y (that represents the target variable) values of 100 different observations. You decided to use a polynomial regression model but worry about the choice of the degree of the polynomial.

(a) Split your dataset into a test set and train set. (20% test set, 80% training set)
(b) Try different degrees of polynomial functions and pick the one that has the smallest LOOCV mean squared error, and report LOOCV validation errors of each polynomial functions
(c) Refit your model on the training set with the selected degree of polynomial and compute the test mean squared error.
(d) Try different degrees of polynomial functions and pick the one that has the smallest 5-fold cross validation mean squared error, and report 5-fold cross validation errors of each polynomial functions.
(e) Refit your model on the training set with the selected degree of polynomial and compute the test mean squared error and test R2 score.
(f) Are the degrees of polynomials chosen with LOOCV and 5-fold cross validation same?

You are required to upload your codes to the ninova. Write your codes as clear as possible and add comments if necessary.