

EE325: Introductory Econometrics, Semester 1/2017

Homework 2

Date of Submission: Thursday 28 September 2017 (in class, before lecture begins)

- 1) Show that $\sum x_i y_i = \sum x_i Y_i$ and that $\sum x_i^2 = \sum X_i^2 - n\bar{X}^2$

In other words, show that:

$$\hat{\beta}_2 = \frac{\sum x_i y_i}{\sum x_i^2} = \frac{\sum x_i Y_i}{\sum X_i^2 - n\bar{X}^2}$$

- 2) In the below table, X_i is GPA of each student and Y_i is total microeconomics exam point (total points are 100).

Y	X
63	2.7
72	3.4
78	3.1
81	3.5
87	3.6
75	3
75	2.8
90	3.8

- 2.1) According to simple linear regression model, find $\hat{\beta}_1, \hat{\beta}_2$

2.2) Plot all of order pairs and regression line on the graph.

- 2.3) Show that $\sum \hat{u}_i = 0$