Spring 2021 Free Response Chapter 06.03 Linear Regression

Given the following data of y vs. x

x	1	2	3	4	5
у	1	1.1	0.9	0.96	0.96

The *y* vs. *x* data is regressed to a constant line given by y = a, where *a* is a constant. What is the value of *a* obtained by minimizing the sum of the squares of the residuals?

a) Derive the formula for *a*

b) Show the calculations.

c) Did you do the second derivative test and establish that part (a) in fact corresponds to an absolute minimum of the sum of square of residuals. Are you surprised by the answer in part (a)?

Answer:

b) 0.984