MTH 372 (Winter 2025) : Tutorial X

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1. Plasma bradykininogen levels are related to the body's ability to resist inflammation. In a 1968 study (Eilam, N., Johnson, P. K., Johnson, N. L., and Creger, W., "Bradykininogen levels in Hodgkin?s disease," Cancer, 22, pp. 631– 634), levels were measured in normal patients, in patients with active Hodgkin's disease, and in patients with inactive Hodgkin's disease. The data (in micrograms of bradykininogen per milliliter of plasma) consists of 13 observations from each of the three groups. The data resulted in total sum of squares of 210.31. While, the residual sum of squares is 142.190. Test, at the 5 percent level of significance, the hypothesis that the mean bradykininogen levels are the same for all three groups. Answer the following

   (a) What test or method will be performed to test the hypothesis. Explain.

   (b) What are the assumptions and are they met here.

   (c) Perform the hypothesis test and draw inference. Provide all the details

2. Using least square estimation approach, find the estimates of a simple linear regression model based on the following data.

Old	New
16	15
27	24
17	15
33	29
28	25
24	22
18	16
22	20
20	18
29	26
21	19

   Find the predicted new milage rating of a Jeep given that the old rating is 19mi/gal. Is the predicted value close to the actual value of 17 mi>gal?