Stat 350B
Spring 2011
Dr. Fan

Homework Set 2

Due Wednesday, February 16, 2011, before class starts

1. Reading: Sections 11.1-11.4, and 11.7.

   Do the following exercises using Minitab:

   For the data in Ex. 11.88 (p. 659),

2. Make a scatter plot of y vs. x. Does the relationship between the two methods look linear?

3. Write the LS regression line and interpret the slope parameter estimate.

4. Calculate the residual for the first patient. [Hint: $x_1 = 70$ and $y_1 = 18.88$]

5. Write the residual standard deviation and interpret.

6. Give a 95% confidence interval for β_1. Is there a linear relationship between the two methods? Why or why not?

7. Let $x_{n+1} = 100$. Give a 90% C.I. for EY_{n+1} and a 90% P.I. for Y_{n+1}. Interpret the C.I. and P.I.

8. Calculate SST, SSR and SSE. Verify that SST=SSR+SSE.

9. Calculate the correlation coefficient between the two methods. Interpret the correlation coefficient in terms of the nature and strength of the linear relationship between x and y.

10. Calculate the coefficient of determination and interpret.