

Homework # 5 (due Thursday, Dec.14)

*Note: You can have your homework turned back to you on the last day of class, Dec.14, if you turn it in on Tuesday, Dec.12. Otherwise, it will be returned to you at the final exam on Dec.23. As always, I will post a key on Dec.14 after all homework is collected.

Download the data set *hamster.txt* from my website. This data set contains the heart and kidney sizes of 73 hamsters (log2 grams).

1. Compute the least squares regression line for heart as a function of kidney.
2. Calculate the residuals.
3. Construct a histogram of the residuals. Are the residuals normally distributed ?
4. Generate a time plot of the residuals. Is there dependence ?
5. Considering 3 and 4, does the least squares regression line fit the data ?
6. Comment on the coefficient of determination.
7. At the 0.05 level of significance, test the null that the true population slope β is equal to zero. What do you conclude ?

8-10 from your text: 13.39-13.41