These activities cover the essential material from chapters 7, 8.

This coming Monday 5th there will be a graded assignment for you to complete in class for credit.It will be just like your recitation but for different data. I will describe the recitation assignment.Attached you will find a.pdf file of an (x, y) plot. It is the one you will use for your recitation assignment.

** ** *** NOTE : In lecture Monday you will pick up a page with your picture and another plot of this same kind. You will have the opportunity to work in small groups and ask questions about answering the following questions. You will hand in our completed sheet at the end of class FOR CREDIT. You may lose points if you fail to complete this assignment or do poorly on it. ** ** ***

Back to the Tuesday assignment.

For Tuesday recitation Oct. 6 you are to you are to identify the following in the plot attached to this message.

1. Marginal normal density for x.

2. Standard deviation of marginal distribution of x.

3. Marginal density for y.

4. Standard deviation of marginal distribution for y.

5. 68% interval for x.

6. 68% interval for y.

7. Naive line and its slope (rise to run).

8. Regression line (the line joining points (x, mean y score for this x). These are the vertical strip means.

9. Slope of regression line.

10. Ratio (slope of regression line)/(slope of naive line). This ratio is FOR NORMAL PLOTS the correlation r.

Also solve the following.

11. Plot points (0, 0), (0, 4), (4, 4). Draw in the "best line" according to you. Is the plot normal?

12. Refer to #11. Calculate mean x, mean y, s(x), s(y), correlation r.

x	y
0	0
0	4
4	4

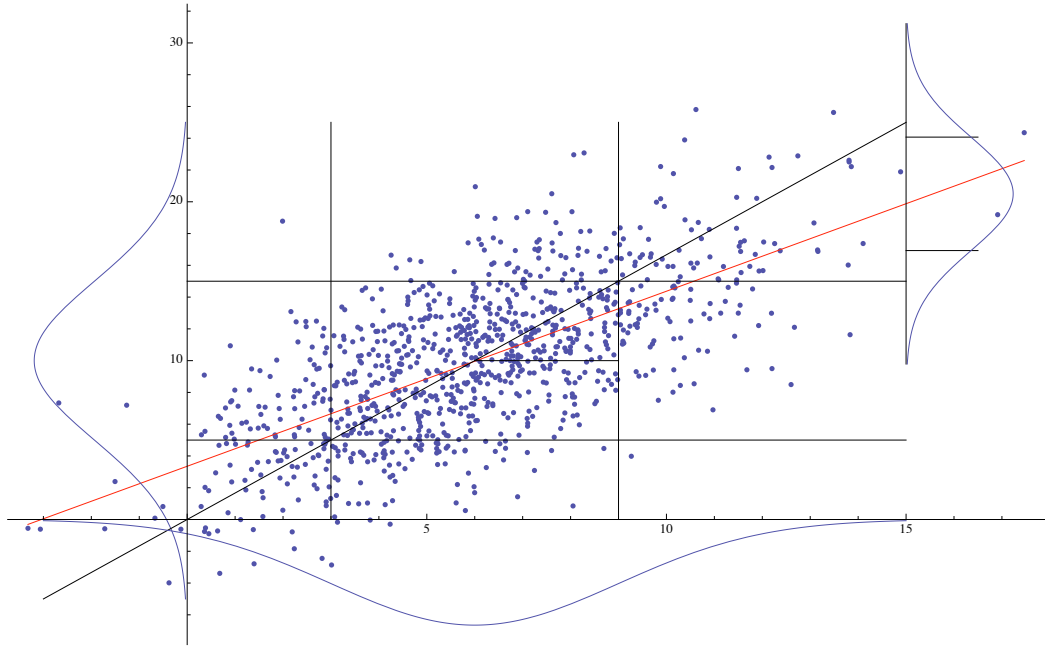
13. Refer to #12. The LEAST SQUARES LINE is defined as that line having the property that it minimizes its distance from the plot of points, in the sense of sum of squares of vertical discrepancies between point and line. Mathematically, the regression line passes through the point of means (mean of x, mean of y) with slope r s(y)/s(x). Find the least squares line for the data of #12 and plot it with that data. Is it the line you chose in #11?

Un-related to the above.

14. The correlation between (x, y) is 0.78. What is the correlation between (2 x - 6, 0.7 y + 3)?

15. The correlation between (x, y) is 0.78. What fraction of s(y) is explained by regression on x?

Out[541]=



Fraction of s_y explained by regression, location of s_y, s_x in picture,
sd of y - scores for given x (algebraically and as seen in picture),
slopes of regr line (algebraically and as seen in picture),
r (algebraically and as seen in picture),
plot of vertical strip averages?