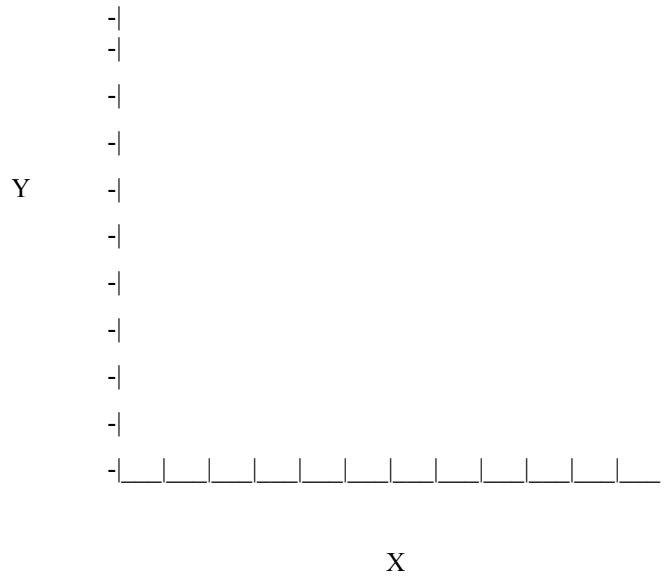
Chapter 10 Homework **Name:** _____

Below are pairs of scores from variables X and Y. Use this data to answer the following questions.

1. In the space to the right, construct a scatterplot of the data and draw in a best fit line. What type of relationship appears to be present between variables X and Y?

i	X	Y
A	10	0
B	9	2
C	7	1
D	6	2
E	6	2
F	4	4
G	3	6
H	3	8
I	2	7
J	0	8



Calculate $\bar{X}$ and $\bar{Y}$ value, then each $(X-\bar{X})$ and $(Y-\bar{Y})$ value, and each $(X-\bar{X})^2$ and $(Y-\bar{Y})^2$ value.

2a. What is the value of the sum of the cross products (*SCP*)?

2b. What is the value of the covariance (cov_{XY}) ?

3a. What is the value of the sum of squares for variable X (SS_X) ?

3b. What is the value of the estimated standard deviation for variable X $(\hat{s}_X)$?

4a. What is the value of the sum of squares for variable Y (SS_Y) ?

4b. What is the value of the estimated standard deviation for variable Y $(\hat{s}_Y)$?

5. Calculate the Pearson correlation (*r*):

6. What is the proportion of explained variance?

7. What is the amount of residual variance?

Chapter 10 Homework **Name:** _____

Below are rankings of the top ten students at a school by the dean and the president of the school.

Student	Dean	President
Student A	10	10
Student B	4	6
Student C	2	8
Student D	3	3
Student E	9	7
Student F	8	9
Student G	1	4
Student H	6	2
Student I	5	1
Student J	7	5

1. What is the value of *N*?

2a. Calculate the D and D^2 scores.

2b. What is the value of $\sum D$?

2c. What is the value of $\sum D^2$?

3. Based on the data above calculate the Spearman correlation.

4. Is there strong agreement between the Dean and the President on the student' rankings?