

ISTA 116: WEB QUIZ 5 (7 PTS)

A psychologist is studying the relationship between sleep and memory. As a preliminary, exploratory step, she recruits five graduate students to spend a night sleeping in a controlled setting in the laboratory. Each is asked to stay awake until a certain time, and then goes to sleep. All five wake up at the same time, and engage in a simple word recall task. The (fictional) data below shows the number of hours spent sleeping, as well as the number of errors made in the recall task.

ID #	Hrs of Sleep	Errors
1	3	5
2	9	1
3	2	11
4	6	6
5	5	7

Compute the following quantities:

- The means for each variable
- The squared deviations for each participant
- The cross products for each participant
- The sum of the squared deviations for each variable
- The variance and standard deviation for each variable
- The sum of the cross products
- Pearson's r relating sleep to errors

Now, replace the raw data with rank data, and repeat the above process to compute Spearman's ρ .