# STATISTICS 2
# WS 2021 (Mag. Thomas Forstner)

Course-Number: 366.554

24) The exams of 40 students were rated by two different teachers. The results shown in the table below were obtained.

| | | Teacher A | |
|---|---|---|---|
| | | exam passed | exam failed |
| Teacher B | exam passed | 15 | 10 |
| | exam failed | 5 | 10 |

a) Calculate an appropriate measure of the agreement between the two teachers.
b) Find out, if there is a statistically relevant difference between the two teachers. (alpha = 5%).

25) The table below shows the performance-score of students in Statistics 1 (X) and Statistics 2 (Y)

| | Student 1 | Student 2 | Student 3 | Student 4 | Student 5 | Student 6 | Student 7 | Student 8 | Student 9 | Student 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| X | 10 | 8 | 3 | 4 | 1 | 5 | 9 | 2 | 6 | 6 |
| Y | 7 | 9 | 5 | 3 | 2 | 6 | 10 | 1 | 4 | 8 |

a) Calculate the Bravais-Pearson correlation coefficient between X and Y.
b) Construct a test to verify if the relationship between X and Y is statistically significant (alpha = 5%).

26) A researcher is interested in whether the relationship between the SAT (Scholastic Assessment Test) and the mean of the grades in the first year of college is different for engineering majors than it is for humanities majors. One hundred engineering majors and 100 humanities majors were sampled and each student's SAT and the mean of the grades in the first year of college were recorded. The Bravais-Pearson's correlation between these two measures was 0.62 for the engineering majors and 0.36 for the humanities majors. Is this difference in correlations significant (alpha=5%)?