

**Homework part D.**

**5 points [1.5p: D1] + [1.5p: D2] + [2p: D3]**

**Deadline: week 1-6 June 2024 (the precise date will be fixed by your lab teacher).**

**D1. (1.5 points)** The Probability Theory scores follow a distribution with variance  $\sigma^2 = 92.16$ . Determine 95% and 99% confidence intervals for the expected Probability Theory score using the simple sample from *probabilitati.csv*.

**D2. (1.5 points)** The Statistics scores follow a normal distribution. Determine 95% and 99% confidence intervals for the expected Statistics score using the simple sample from *statistica.csv*.

**D3. (2 points)** Since only 85% of the students were able to solve the Statistics homeworks it was decided to change the structure of these homeworks. After this change from a simple sample of 100 students 14 were not able to solve the new homeworks. Can we conclude that the change was useless? (Use 1% and 5% level of significance.)

Solutions to these exercises (the corresponding R functions and their calls) will be written in an single R script.