

Statistical Criteria

Folder contains:

- a) File *A2025.mat* consists of 20 columns (random variables) and 100 rows (cases - trials for each random variable);
The ordinal number of column (your sample) corresponds to your ordinal number in group list

- b) File *figure task5.png* represents histograms for every variable (sample). Title for each axes shows theoretical parameters of Normal distribution and sample analogues;
- c) Statistical Tests.docx - help to you.

Problem

Need to discover statistical properties of your sample according to following scheme:

- 1) Using theoretical and sample parameters (see *figure task5.png*) prove statistical correspondence for your sample mean. See *!!!Stat Tests and Matlab*.pdf*.
- 2) Prove correspondence between your empirical distribution and theoretical Normal (use two tests).
- 3) Let n - your ordinal number, need estimate *pooled variance* for united sample of three samples $(n-1, n, n+1)$, if your $n=1$, then instead $n-1$ choose 20 and if your $n=20$, then instead $n+1$ choose 1 (case of circular numeration).
- 4) Compare equality of variance for your sample and the next (column) sample using statistical test.
- 5) Each point needs to be justified. Draw conclusions.

Requirements:

- 1) Use standard ML function and user's and statistical tests, based on Presentation5 (determine value of criterion statistics $\rho(X)$, probability of $\rho(X)$, according to it's law of distribution, critical points and draw conclusion). (need to show *.mlx)
- 2) To prepare report with explanations and illustrative material (without lot of *fprintf*)