Lab Nr. 1, Probability and Statistics

Introduction to Matlab

- M-files: script files and functions;
- working with arrays, matrices;
- matrix and dot operations;
- *input*
- special matrices, *zeros*, *ones*, *eye*;
- display of results, *fprintf* and *format*;
- graphics in Matlab, *plot*, *subplot*, *title*, *legend*, colors, linewidth, linestyle.

Applications

1. For the matrices

$$A = \begin{bmatrix} 1 & 0 & -2 \\ 2 & 1 & 3 \\ 0 & 1 & 0 \end{bmatrix} \text{ and } B = \begin{bmatrix} 2 & 1 & 1 \\ 1 & 0 & -1 \\ 1 & 1 & 0 \end{bmatrix},$$

print the matrices $C = A - B$, $D = A \cdot B$ and $E = [e_{ij}]$, where $e_{ij} = a_{ij} \cdot b_{ij}$.

2. For $x \in [0, 3]$, graph on the same set of axes the functions $x^4/10$, $x \sin x$ and $\cos x$, in different colors and linestyles. Display a title and a legend on your graph. Then plot them on different pictures, but in the same window.