Assignment 6

A. Write a MATLAB script with the name Assignment6A_Groupxx.m[1] that computes the general solution of the following systems of equations:

a)

$$\begin{pmatrix} 2 & 1 & 1 & -1 & 0 \\ 0 & -1 & -1 & 2 & -1 \\ 0 & -1 & 2 & 1 & 1 \\ 2 & -1 & -1 & 3 & -2 \\ 0 & 1 & -5 & 0 & -3 \end{pmatrix} \cdot \boldsymbol{x} = \begin{pmatrix} 8 \\ 5 \\ 7 \\ 18 \\ -9 \end{pmatrix}$$

b)

$$\begin{pmatrix} 1 & 1 & -2 & 1 \\ 0 & -1 & 0 & 2 \\ -1 & -1 & 2 & -1 \end{pmatrix} \cdot \boldsymbol{x} = \begin{pmatrix} 1 \\ 4 \\ 0 \end{pmatrix}$$

B. Write a MATLAB script Assignment6B_Groupxx.m[1] that plots the function $F(c)$, defined by:

$$F(c) = \int_{-1}^{1} \int_{0}^{1-x^2} \frac{\exp(x^2 + y^2)}{\sqrt{c + x + y}} \, \mathrm{d}y \, \mathrm{d}x,$$

in the interval $[0, 10]$ for $c = 0 : 0.1 : 10$. Use integral2 to compute the double integral.

☛ Pack both scripts in a zip file with the name Assignment06_Groupxx.zip.

[1] xx is your group number