HW3

Date: Mehr 23th, Due: Mehr28th

This homework is designed to give you practice with writing functions to solve problems. You will just be graded on whether your scripts produce the correct output, but not necessarily on how efficiently they're written.

Q1. Linear system of equations. Solve the following system of equations using \. Compute and display the error vector

$3a + 6b + 4c = 1$

$a + 5b = 2$

$7b + 7c = 3$

Q2. Numerical integration. What is the value of: $\int_0^5 x\,e^{-x/3}\,dx$? Use **trapz** or **quad**. Compute and display the difference between your numerical answer and the analytical answer:

$-24e^{-5/3} + 9$.

Q3. Computing the inverse. Calculate the inverse of $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ and verify that when you multiply the original matrix by the inverse, you get the identity matrix (**inv**). Display the inverse matrix as well as the result of the multiplication of the original matrix by its inverse.

Reference: https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-057-introduction-to-matlab-january-iap-2019/index.htm