

Home work. (15/03/2012)

Ex 1: Given $A \in \mathbb{R}^{n \times n}$, $\underline{b} \in \mathbb{R}^{n \times 1}$, write a function for computing $\underline{c} = A \cdot \underline{b}$, where $c_i = \sum_{j=1}^n a_{ij} b_j$
($i=1, \dots, n$)

Ex 2: Given $N \in \mathbb{N}$ and the sequence $a_n = \frac{n+1}{n}$
write a function for plotting the values of the sequence for $n = 1, \dots, N$.

Ex 3 Given $N \in \mathbb{N}$, $\begin{cases} a_0 = 1 \\ a_{n+1} = \cos(a_n) \end{cases}$ for $n \geq 0, \dots, N$

write a function for plotting the values of the sequence.

Ex 4 Given $N \in \mathbb{N}$, $x \in \mathbb{R}$, write a function for computing $S = \sum_{n=0}^N \frac{x^n}{n!}$ (that approximates e^x)

and the error ~~err~~ $= |e^x - S|$.