

CÁLCULO NUMÉRICO

Lista No. 3a – Gabarito

1. Solução exata: $(x_1 = 111/44; x_2 = 1/44; x_3 = 3/44; x_4 = 75/44)$

2. a) $(x_1 = 0.00; x_2 = 10.0; x_3 = 0.143)$

b) $(x_1 = 69.0; x_2 = -349; x_3 = 321)$

c) $(x_1 = 0.183; x_2 = 0.0103; x_3 = -0.0200; x_4 = -1.12)$

3. a) $(x_1 = 0.00; x_2 = 10.0; x_3 = 0.143)$

b) $(x_1 = 73.0; x_2 = -373; x_3 = 344)$

c) $(x_1 = 0.178; x_2 = 0.0127; x_3 = -0.0204; x_4 = -1.16)$

4. a) $(x_1 = 0.00; x_2 = 10.0; x_3 = 0.143)$

b) $(x_1 = 73.0; x_2 = -370; x_3 = 342)$

c) $(x_1 = 0.179; x_2 = 0.0127; x_3 = -0.0203; x_4 = -1.15)$

5. a)

$$L = \begin{bmatrix} 1 & 0 & 0 \\ 1.5 & 1 & 0 \\ 1.5 & 1 & 1 \end{bmatrix} \quad U = \begin{bmatrix} 2 & -1 & -1 \\ 0 & 4.5 & 7.5 \\ 0 & 0 & -4 \end{bmatrix}$$

b)

$$L = \begin{bmatrix} 1 & 0 & 0 \\ -0.5 & 1 & 0 \\ 2 & 2 & 1 \end{bmatrix} \quad U = \begin{bmatrix} 2 & -1.5 & 3 \\ 0 & 0.75 & 3.5 \\ 0 & 0 & -8 \end{bmatrix}$$

c)

$$L = \begin{bmatrix} 1 & 0 & 0 & 0 \\ -1.84923 & 1 & 0 & 0 \\ -0.459652 & -0.250117 & 1 & 0 \\ 2.7871 & -0.307956 & -5.35223 & 1 \end{bmatrix}$$
$$U = \begin{bmatrix} 2.17556 & 4.0231 & -2.1732 & 5.1967 \\ 0 & 13.4396 & -4.01874 & 10.8072 \\ 0 & 0 & -0.892969 & 5.09173 \\ 0 & 0 & 0 & 12.0359 \end{bmatrix}$$

6. a) $(x_1 = 0.5; x_2 = 0; x_3 = 0)$

b) $(x_1 = 0.875; x_2 = 0.708333; x_3 = -0.0625)$

c) $(x_1 = 0.0743235; x_2 = -0.742971; x_3 = -2.72854; x_4 = -0.500761)$