

ACH2033 – Matrizes, Vetores e Geometria Analítica

Lista de Exercícios/Problemas 5

Resolver o sistema linear $Ax = b$.

$$001) A = \begin{pmatrix} 1 & 0 & 1 \\ 1 & 1 & \alpha \\ 1 & 1 & 1 \end{pmatrix}, b = \begin{pmatrix} 1 \\ \beta \\ 0 \end{pmatrix} \quad 002) A = \begin{pmatrix} 1 & 1 & 1 \\ 2 & \alpha & 0 \\ 4 & 2 & 0 \end{pmatrix}, b = \begin{pmatrix} 1 \\ 1 \\ \beta \end{pmatrix} \quad 003) A = \begin{pmatrix} 1 & 1 & 1 \\ 2 & \alpha & 0 \\ 4 & 2 & 1 \end{pmatrix}, b = \begin{pmatrix} 1 \\ 1 \\ \beta \end{pmatrix}$$

$$004) A = \begin{pmatrix} 1 & 1 & 1 \\ 2 & \alpha & \beta \\ 1 & 2 & 0 \end{pmatrix}, b = \begin{pmatrix} 1 \\ 1 \\ \gamma \end{pmatrix} \quad 005) A = \begin{pmatrix} 1 & \alpha & \beta \\ 2 & 1 & 1 \\ 1 & 2 & 0 \end{pmatrix}, b = \begin{pmatrix} 1 \\ \gamma \\ 1 \end{pmatrix} \quad 006) A = \begin{pmatrix} 1 & 2 & 3 \\ 2 & 4 & 2 \\ 0 & \alpha & \beta \end{pmatrix}, b = \begin{pmatrix} \gamma \\ 0 \\ 1 \end{pmatrix}$$

$$007) A = \begin{pmatrix} 1 & 1 & 1 \\ \alpha & 0 & 1 \\ 1 & 1 & \beta \end{pmatrix}, b = \begin{pmatrix} \gamma \\ 0 \\ 1 \end{pmatrix} \quad 008) A = \begin{pmatrix} \alpha & \beta & \gamma \\ 1 & 0 & 1 \\ 1 & 1 & 0 \end{pmatrix}, b = \begin{pmatrix} \delta \\ 0 \\ 1 \end{pmatrix} \quad 009) A = \begin{pmatrix} \alpha & \beta & \gamma \\ 1 & 1 & 1 \\ 1 & 1 & 0 \end{pmatrix}, b = \begin{pmatrix} \delta \\ 0 \\ \epsilon \end{pmatrix}$$

$$010) A = \begin{pmatrix} 1 & 1 & 1 & \alpha \\ 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 0 \\ 0 & 1 & 0 & 1 \end{pmatrix}, b = \begin{pmatrix} 1 \\ 0 \\ 0 \\ 1 \end{pmatrix} \quad 011) A = \begin{pmatrix} 1 & 1 & 1 & 0 \\ 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 0 \\ 0 & 1 & 0 & \alpha \end{pmatrix}, b = \begin{pmatrix} 1 \\ 0 \\ 0 \\ 1 \end{pmatrix} \quad 012) A = \begin{pmatrix} 1 & 1 & 1 & 0 \\ 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 0 \\ 0 & \alpha & 0 & 1 \end{pmatrix}, b = \begin{pmatrix} 1 \\ 0 \\ 1 \\ \beta \end{pmatrix}$$

Obter a fórmula geral.

$$013) 2a_n = a_{n-1} + 1 \quad \text{com } a_0 = 2$$

$$014) a_n = a_{n-1} + 2a_{n-2} + 3 \quad \text{com } a_0 = a_1 = 1$$

$$015) a_n = 2a_{n-1} + 8a_{n-2} + 2 \quad \text{com } a_0 = a_1 = 1$$

$$016) a_n = -a_{n-1} + a_{n-2} + 2 \quad \text{com } a_0 = a_1 = 1$$

$$017) a_n = a_{n-1} + 6a_{n-2} + 7 \quad \text{com } a_0 = a_1 = 1$$

$$018) a_n = 3a_{n-1} + 10a_{n-2} + 1 \quad \text{com } a_0 = a_1 = 1$$

$$019) a_n = 3a_{n-1} - a_{n-2} - 4 \quad \text{com } a_0 = 0, a_1 = 1$$

$$020) a_n = 2a_{n-1} + 2a_{n-2} - 3 \quad \text{com } a_0 = 1, a_1 = 0$$

$$021) \begin{cases} a_n = a_{n-1} + b_{n-1} \\ b_n = a_{n-1} + 2b_{n-1} \end{cases} \quad \text{com } a_0 = b_0 = 1$$

$$022) \begin{cases} a_n = b_{n-1} \\ b_n = -a_{n-1} + 3b_{n-1} \end{cases} \quad \text{com } a_0 = b_0 = 2$$

$$023) \begin{cases} a_n = 3a_{n-1} + 5b_{n-1} \\ b_n = a_{n-1} + 2b_{n-1} \end{cases} \quad \text{com } a_0 = 0, b_0 = 1$$

$$024) \begin{cases} a_n = b_{n-1} - 7a_{n-1} \\ b_n = -8a_{n-1} + b_{n-1} \end{cases} \quad \text{com } a_0 = b_0 = 1$$