# ACH2033 – Matrizes, Vetores e Geometria Analítica

Lista de Exercícios/Problemas 5

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Resolver o sistema linear $Ax = b$.

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

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

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

010) $A = \begin{pmatrix} 1 & 1 & 1 & \alpha \\ 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 0 \\ 0 & 1 & 0 & 1 \end{pmatrix}$, $b = \begin{pmatrix} 1 \\ 0 \\ 0 \\ 1 \end{pmatrix}$ 011) $A = \begin{pmatrix} 1 & 1 & 1 & 0 \\ 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 0 \\ 0 & 1 & 0 & \alpha \end{pmatrix}$, $b = \begin{pmatrix} 1 \\ 0 \\ 0 \\ 1 \end{pmatrix}$ 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) $2a_n = a_{n-1} + 1$ com $a_0 = 2$

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

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

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

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

018) $a_n = a_{n-1} + 2a_{n-2} + 1$ com $a_0 = a_1 = 1$

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

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

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

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

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

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