Álgebra Linear I

Lista 2 de Exercícios

Determinante e inversa de matrizes

1) Dadas as matrizes

$$\mathrm{A} = \begin{bmatrix} 3 & 4 & 1 \\ -5 & 2 & 9 \\ 7 & 8 & 6 \end{bmatrix}, \mathrm{B} = \begin{bmatrix} -4 & 1 & -1 \\ 3 & 2 & -3 \\ -1 & 5 & 1 \end{bmatrix}, \mathrm{C} = \begin{bmatrix} -4 & 0 & -9 \\ 3 & 2 & 3 \\ -1 & 5 & 1 \end{bmatrix},$$

$$\mathrm{D} = \begin{bmatrix} -3 & -1 & 1 & 2 \\ 3 & 3 & -1 & 2 \\ -1 & 1 & 1 & -2 \\ 5 & 6 & -1 & -2 \end{bmatrix}, \mathrm{E} = \begin{bmatrix} 2 & 2 & 2 \\ 3 & 4 & 7 \\ 5 & 6 & 9 \end{bmatrix}, \mathrm{F} = \begin{bmatrix} 1 & 3 \\ 2 & 7 \end{bmatrix}$$

$$\mathrm{G} = \begin{bmatrix} -3 & 4 & -5 \\ 0 & 1 & 2 \\ 3 & -5 & 4 \end{bmatrix},$$

calcule:

(a) $\det \mathrm{A}$ (b) $\det \mathrm{B}$ (c) $\det \mathrm{D}$

(d) $\det(\mathrm{A} + \mathrm{C})$ (e) $\det \mathrm{A} + \det \mathrm{C}$ (f) $\det(\mathrm{B} \cdot \mathrm{C})$

(g) $\det(\mathrm{B}) \cdot \det(\mathrm{C})$ (h) a inversa de E (i) F^{-1}

(j) G^{-1} (k) D^{-1}