C . E . S . A . R

EXERCÍCIOS

1. Dada as matrizes:

$$A=\begin{bmatrix}3 & 0\\ -1 & 2\\ 1 & 1\end{bmatrix}, B=\begin{bmatrix}4 & -1\\ 0 & 2\end{bmatrix}, C=\begin{bmatrix}1 & 4 & 2\\ 3 & 1 & 5\end{bmatrix}, D=\begin{bmatrix}1 & 5 & 2\\ -1 & 0 & 1\\ 3 & 2 & 4\end{bmatrix} \text{ e } E=\begin{bmatrix}6 & 1 & 3\\ -1 & 1 & 2\\ 4 & 1 & 3\end{bmatrix}$$

Calcule

a. D + E b. 5A c. -3(D + 2E)

2. Determine os valores de a, b, c e d

a. $A=\begin{bmatrix}a & 3\\ -1 & a+b\end{bmatrix}=\begin{bmatrix}4 & d-2c\\ d+2c & -2\end{bmatrix}$

b. $A=\begin{bmatrix}a-b & b+a\\ 3d+c & 2d-c\end{bmatrix}=\begin{bmatrix}8 & 2\\ 11 & 14\end{bmatrix}$

3. Calcule a determinante das matrizes abaixo

a. $A=\begin{bmatrix}3 & -7 & -2\\ -3 & 5 & 1\\ 6 & -4 & 0\end{bmatrix}$

b. $A=\begin{bmatrix}2 & -4 & 2\\ -4 & 5 & 2\\ 6 & -9 & 1\end{bmatrix}$

04.

.Resolva as seguintes equações matriciais:

a) $X+\begin{pmatrix}4 & 3\\ 1 & 1\\ 2 & 0\end{pmatrix}=\begin{pmatrix}5 & 0\\ 2 & 3\\ 7 & 8\end{pmatrix}$

b) $X-\begin{pmatrix}1 & 4 & 7\\ -2 & 5 & -3\end{pmatrix}=\begin{pmatrix}-1 & 2 & 11\\ -3 & 4 & 1\end{pmatrix}$

5. .Resolva, usando a Regra de Cramer:

a) $\begin{cases}x+4y=0\\ 3x+2y=5\end{cases}$

b) $\begin{cases}2x-y=2\\ -x+3y=-3\end{cases}$

c) $\begin{cases}5x-4y=6\\ -x+y=-1\end{cases}$

6. .Resolva, usando a Regra de Cramer:

a) $\begin{cases}3x-y+z=1\\ 2x+3z=-1\\ 4x+y-2z=7\end{cases}$

b) $\begin{cases}x-y+z=-5\\ x+2y+4z=4\\ 3x+y-2z=-3\end{cases}$

c) $\begin{cases}-x-y+z=1\\ x+y+z=1\\ 2x+3y+2z=0\end{cases}$

Gabarito

01.

a. 7. 6. 5.
-2. 1. 3.
7. 3. 7.

b. 15. 0.
-5. 10.
5. 5.

c. -39. -21. -24.
9. -6. -15.
-33. -12. -30.

02.

a. a = 4,
b = -6
c = -1
d = 1

b. a = 5
b = -3
c = -4
d = 5

03.

a. Det A = 6 b. Det A = -6

04.

a) $X = \begin{pmatrix} 1 & -3 \\ 1 & 2 \\ 5 & 8 \end{pmatrix}$

b) $X = \begin{pmatrix} 0 & 6 & 18 \\ -5 & 9 & -2 \end{pmatrix}$

5. a) $S = \left\{\left(2, -\frac{1}{2}\right)\right\}$

b) $S = \left\{\left(\frac{3}{5}, -\frac{4}{5}\right)\right\}$

c) $S = \{(2, 1)\}$

6. a) $S = \{(1, 1, -1)\}$

b) $S = \{(-2, 3, 0)\}$

c) $S = \{(2, -2, 1)\}$