

I. Let: $A_{ij} = 2i + 3j$

(3×2)

$$A = \begin{pmatrix} A_{11} & A_{12} \\ A_{21} & A_{22} \\ A_{31} & A_{32} \end{pmatrix} \quad A = \begin{pmatrix} 5 & 8 \\ 7 & 10 \\ 9 & 12 \end{pmatrix}$$

$$A_{15} = 2 \cdot 1 + 3 \cdot 1$$

$$A_{15} = 2 + 3$$

$$A_{15} = 5$$

$$A_{15} = 2 \cdot 1 + 3 \cdot 2$$

$$A_{15} = 2 + 6$$

$$A_{15} = 8$$

$$A_{15} = 2 \cdot 2 + 3 \cdot 1$$

$$A_{15} = 4 + 3$$

$$A_{15} = 7$$

$$A_{15} = 2 \cdot 2 + 3 \cdot 2$$

$$A_{15} = 4 + 6$$

$$A_{15} = 10$$

$$A_{15} = 2 \cdot 3 + 3 \cdot 1$$

$$A_{15} = 6 + 3$$

$$A_{15} = 9$$

$$A_{15} = 2 \cdot 3 + 3 \cdot 2$$

$$A_{15} = 6 + 6$$

$$A_{15} = 12$$

II- $A = \begin{pmatrix} A_{11} & A_{12} \\ A_{21} & A_{22} \end{pmatrix}$

Let: $A_{ij} = i^2 + 4j^2$

$$A_{15} = 1^2 + 4 \cdot 1^2$$

$$A_{15} = 1 + 4$$

$$A_{15} = 5$$

$$A = \begin{pmatrix} 5 & 17 \\ 8 & 20 \end{pmatrix}$$

(LETRA "B")

$$A_{15} = 1^2 + 4 \cdot 2^2$$

$$A_{15} = 1 + 16$$

$$A_{15} = 17$$

$$A_{15} = 17$$

$$A_{15} = 2^2 + 4 \cdot 1^2$$

$$A_{15} = 4 + 4$$

$$A_{15} = 8$$

$$A_{15} = 2^2 + 4 \cdot 2^2$$

$$A_{15} = 4 + 16$$

$$A_{15} = 20$$

$$III. \begin{bmatrix} 1 & X+2 \\ Y-1 & Z+1 \end{bmatrix} = \begin{bmatrix} 1 & -X \\ 2Y & -2Z \end{bmatrix}$$

$$\begin{array}{l|l|l} X+2=-X & Y-1=2Y & Z+1=-2Z \\ X+X=-2 & -1=2Y-Y & 1=-2Z-Z \\ 2X=-2 & -1=Y & 1=-3Z \\ \underline{X=-2/2} & \underline{Y=-1} & \underline{Z=-1/3} \\ \underline{X=-1} & & \end{array}$$

$$IV. \begin{bmatrix} 3 & -X \\ 3X & X \end{bmatrix} = \begin{bmatrix} 3 & Y \\ 2X+1 & Z-1 \end{bmatrix}$$

$$\begin{array}{l|l|l} 3X=2X+1 & \underline{Y=-1} & Z-1=1 \\ 3X-2X=1 & & Z=1+1 \\ \underline{X=1} & & \underline{Z=2} \end{array}$$

VI- $A = \begin{bmatrix} -1 \\ 2 \\ 3 \end{bmatrix}$ $B = \begin{bmatrix} 0 \\ -2 \\ 1 \end{bmatrix}$

$$2A = \begin{bmatrix} -2 \\ 4 \\ 6 \end{bmatrix} - B = \begin{bmatrix} -0 \\ +2 \\ -1 \end{bmatrix} = S = \begin{bmatrix} -2 \\ 6 \\ 5 \end{bmatrix} \text{ Letra "D"}$$

VII- $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{bmatrix}$ $B = \begin{bmatrix} -1 & 3 & 2 \\ 2 & 0 & 1 \end{bmatrix}$

$$A - B^T = \begin{bmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{bmatrix} - \begin{bmatrix} +1 & -2 \\ -3 & 0 \\ -2 & -1 \end{bmatrix} = S = \begin{bmatrix} 2 & 0 \\ 0 & 4 \\ 3 & 5 \end{bmatrix} \text{ Letra "B"}$$

VIII- $A = \begin{bmatrix} 2 & -1 & 2x \\ x & 0 & -2 \\ 4 & 3 & 2 \end{bmatrix}$ $A^T = \begin{bmatrix} 2 & x & 4 \\ -1 & 0 & 3 \\ 2x-2 & 2 & 2 \end{bmatrix}$

$$4 = 2x \quad x = -1 \quad -2 = 3$$

$$y = 4/2 \quad z = -3$$

$$y = 2$$

$$2 - 1 - 3 = -2 \text{ Letra A}$$

IX- $A_{IJ} = \begin{cases} 1+j, & \text{se } i \neq j \\ 1, & \text{se } i = j \end{cases}$ $B_{IJ} = \begin{cases} 0, & \text{se } i \neq j \\ 2i-j, & \text{se } i = j \end{cases}$

$$A = \begin{bmatrix} A_{11} & A_{12} \\ A_{21} & A_{22} \\ A_{31} & A_{32} \end{bmatrix} \quad A = \begin{bmatrix} 2 & 3 \\ 3 & 1 \\ 4 & 5 \end{bmatrix} \quad B = \begin{bmatrix} B_{11} & B_{12} \\ B_{21} & B_{22} \\ B_{31} & B_{32} \end{bmatrix} \quad B = \begin{bmatrix} 0 & 0 \\ 0 & 2 \\ 0 & 0 \end{bmatrix}$$

$$A = \begin{vmatrix} 2 & 3 \\ 3 & 1 \\ 4 & 5 \end{vmatrix} + B = \begin{vmatrix} 0 & 0 \\ 0 & 2 \\ 0 & 0 \end{vmatrix} = A+B = \begin{vmatrix} 2 & 3 \\ 3 & 3 \\ 4 & 5 \end{vmatrix} \quad \text{LETRA "C"}$$

$$X - \frac{3}{2} \cdot M = \begin{vmatrix} X & 8 \\ 10 & Y \end{vmatrix} = M = \begin{vmatrix} 3x/2 & 12 \\ 15 & 3y/2 \end{vmatrix}$$

$$\frac{2}{3} \cdot N = \begin{vmatrix} Y & 6 \\ 12 & X+4 \end{vmatrix} = N = \begin{vmatrix} 2y/3 & 4 \\ 8 & 2(x+4)/3 \end{vmatrix}$$

$$I - 3x/2 + 2y/3 = 7 = 9x + 4y = \underline{42}$$

$$II - 3y/2 + 2(x+4)/3 = 13 = 9y + 4x + 16 = \underline{78}$$

$$9y - 4y + 4x - 9x = 62 - 42$$

"B" (5T3)

$$5y - 5x = 20$$

$$5(y - x) = 20$$

$$\underline{y - x = 4} \quad \text{LETRA "B"}$$