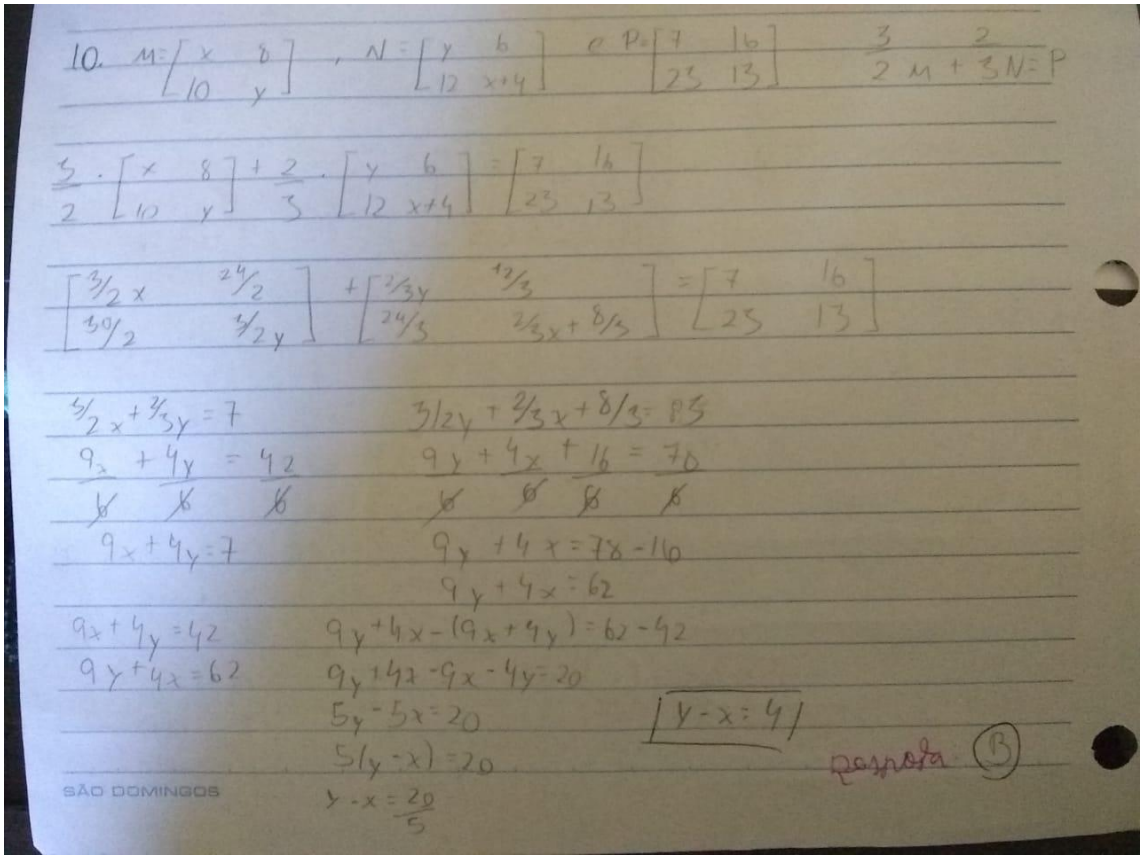
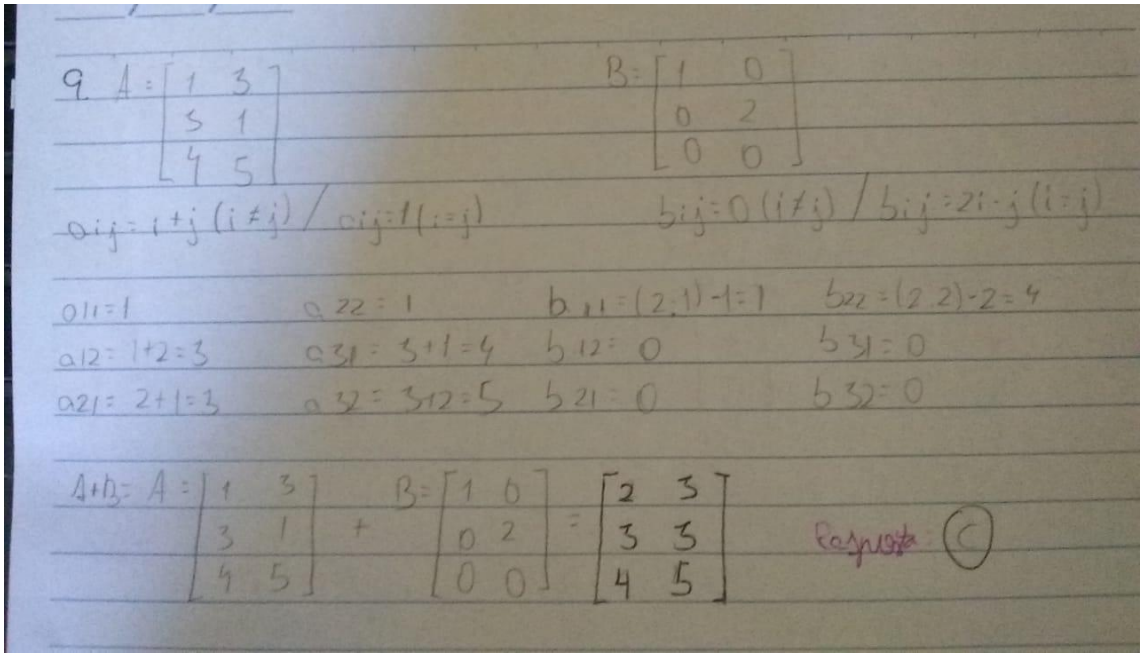
Julia Passos Silva CTII350



$A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{bmatrix}$ - $B = \begin{bmatrix} -1 & 2 \\ 3 & 0 \\ 2 & 1 \end{bmatrix} = \begin{bmatrix} 2 & 0 \\ 0 & 4 \\ 3 & 5 \end{bmatrix}$ Resposta: (B)

8. $A = \begin{bmatrix} 2 & -1 & 2y \\ x & 0 & -z \\ 4 & 3 & 2 \end{bmatrix}$ $\rightarrow A = A^t$ $A^t = \begin{bmatrix} 2 & x & 4 \\ -1 & 0 & 3 \\ 2y & 3 & 2 \end{bmatrix} = A = \begin{bmatrix} 2 & -1 & 2y \\ x & 0 & -z \\ 4 & 3 & 2 \end{bmatrix}$

$x = -1$ $\quad 2y = 4$ $\quad y = \frac{4}{2}$ $\quad y = 2$ $\quad -z = 3^{(-1)}$ $\quad z = -3$ $\quad x + y + z$ $\quad -1 + 2 + (-3)$ $\quad 1 - 3$ $\quad \boxed{-2}$

Resposta: (A)

DOM SEG TER QUA QUI SEX SÁB
DOM LUN MAR MIE JUE VIE SÁB

__/__/__

6. $A \begin{bmatrix} -1 \\ 2 \\ 5 \end{bmatrix}$ e $B = \begin{bmatrix} 0 \\ -2 \\ 1 \end{bmatrix}$ $\rightarrow 2A - B = 2$ $2 \cdot \begin{bmatrix} -1 \\ 2 \\ 5 \end{bmatrix} = \begin{bmatrix} -2 \\ 4 \\ 6 \end{bmatrix}$

$\begin{bmatrix} -2 \\ 4 \\ 6 \end{bmatrix} - \begin{bmatrix} 0 \\ -2 \\ 1 \end{bmatrix} = \begin{bmatrix} -2 \\ 6 \\ 5 \end{bmatrix}$ Resposta: (D)

7. $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{bmatrix}$ e $B = \begin{bmatrix} -1 & 3 & 2 \\ 2 & 0 & 1 \end{bmatrix}$ $\rightarrow A \cdot B^t = ?$

$B^t = B = \begin{bmatrix} -1 & 3 & 2 \\ 2 & 0 & 1 \end{bmatrix} \Rightarrow B = \begin{bmatrix} -1 & 2 \\ 3 & 0 \\ 2 & 1 \end{bmatrix}$

$A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{bmatrix}$ - $B = \begin{bmatrix} -1 & 2 \\ 3 & 0 \\ 2 & 1 \end{bmatrix} = \begin{bmatrix} 2 & 0 \\ 0 & 4 \\ 3 & 5 \end{bmatrix}$ Resposta: (B)

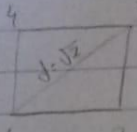
4. $\begin{bmatrix} 3 & -x \\ 3x & x \end{bmatrix} = \begin{bmatrix} 3 & y \\ x+1 & z-1 \end{bmatrix}$

$3x = x+1$ $\quad -x = y$ $\quad y = z-1$

$3x - x = 1$ $\quad y = -(1)$ $\quad 1 = z-1$

$\boxed{x = 1}$ $\quad \boxed{y = -1}$ $\quad z = 1+1$

$\boxed{z = 2}$

5. 


$d^2 = 2l^2$

$l = 1$ $\quad \sqrt{d} = \sqrt{2}.1$

$d = \sqrt{2}$

$a11 = 1a1$ $\quad a12 = 1a2$ $\quad a13 = 1a3$ $\quad a14 = 1a4$ $\quad a21 = 2a1$

$a11 = 0$ $\quad a12 = 1$ $\quad a13 \sqrt{2}$ $\quad a14 = 1$ $\quad a21 = 1$

$a22 = 2a2$ $\quad a23 = 2a3$ $\quad a24 = 2a4$ $\quad a31 = 3a1$ $\quad a32 = 3a2$

$a22 = 0$ $\quad a23 = 1$ $\quad a24 = \sqrt{2}$ $\quad a31 = \sqrt{2}$ $\quad a32 = 1$

$a33 = 3a3$ $\quad a34 = 3a4$ $\quad a41 = 4a1$ $\quad a42 = 4a2$ $\quad a43 = 4a3$

$a33 = 0$ $\quad a34 = 1$ $\quad a41 = 1$ $\quad a42 = \sqrt{2}$ $\quad a43 = 1$

$a44 = 4a4$

$a44 = 0$

$$A = \begin{bmatrix} 0 & 1 & \sqrt{2} & 1 \\ 1 & 0 & 1 & \sqrt{2} \\ \sqrt{2} & 1 & 0 & 1 \\ 1 & \sqrt{2} & 1 & 0 \end{bmatrix}$$

Resposta: (B)

$a21 = 4 + 4.1$ $\quad a22 = 4 + 4.4$

$a21 = 8$ $\quad a22 = 20$

3. $\begin{bmatrix} 1 & x+2 \\ y-1 & z+1 \end{bmatrix} = \begin{bmatrix} 1 & -x \\ 2y & -2z \end{bmatrix}$

$x+2 = -x$ $\quad y-1 = 2y$ $\quad z+1 = 2z$

$+1x = -2$ $\quad 2y - y = 1$ $\quad z + 2z = -1$

$x = \frac{-2}{2}$ $\quad \boxed{y = -1}$ $\quad \boxed{z = \frac{-1}{3}}$

$\boxed{x = -1}$

# Lista de Exercícios I

1. $A = \begin{bmatrix} 5 & 8 \\ 7 & 10 \\ 9 & 12 \end{bmatrix}$ $a_{ij} = 2i + 3j$

$a_{11} = 2.1 + 3.1$ $a_{12} = 2.1 + 3.2$

$a_{11} = 5$ $a_{12} = 8$

$a_{21} = 2.2 + 3.1$ $a_{22} = 2.2 + 3.2$

$a_{21} = 7$ $a_{22} = 10$

$a_{31} = 2.3 + 3.1$ $a_{32} = 2.3 + 3.2$

$a_{31} = 9$ $a_{32} = 12$

2. $A = \begin{bmatrix} 5 & 17 \\ 8 & 20 \end{bmatrix}$

$a_{ij} = i^2 + 4j^2$

$a_{11} = 1^2 + 4.1^2$ $a_{12} = 1^2 + 4.2^2$

$a_{11} = 1 + 4.2$ $a_{12} = 1 + 4.4$

$a_{11} = 5$ $a_{12} = 17$

Resposta: (A)

$a_{21} = 2^2 + 4.1^2$ $a_{22} = 2^2 + 4.2^2$

$a_{21} = 4 + 4.1$ $a_{22} = 4 + 4.4$

$a_{21} = 8$ $a_{22} = 20$