

Tarefa Bônus

01. $\begin{bmatrix} 5 & 8 \\ 7 & 10 \\ 9 & 12 \end{bmatrix}$

$$A_{11} = 2 + 3 = 5$$

$$A_{12} = 2 + 6 = 8$$

$$A_{21} = 4 + 3 = 7$$

$$A_{22} = 4 + 6 = 10$$

$$A_{ij} = 2i + 3j$$

$$A_{31} = 6 + 3 = 9$$

$$A_{32} = 6 + 6 = 12$$

02.

$$A = (a_{ij})_{2 \times 2} \mid A_{ij} = i^2 + 4j^2$$

$$\begin{bmatrix} 5 & 17 \\ 8 & 20 \end{bmatrix}$$

$$A_{11} = 1 + 4 = 5$$

$$A_{12} = 1 + 16 = 17$$

$$A_{21} = 4 + 4 = 8$$

$$A_{22} = 4 + 16 = 20$$

(A)

03.

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

$$x = -1$$

$$y = -1$$

$$z = -\frac{1}{3}$$

$$\begin{array}{c|c|c} x+2 = -x & y-1 = 2y & z+1 = -2z \\ \hline 2x = -2 & -1 = y & 3z = -1 \\ \hline x = -1 & & z = -\frac{1}{3} \end{array}$$

04.

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

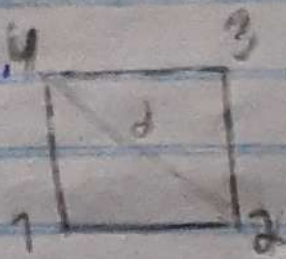
$$x = 1$$

$$y = -1$$

$$z = 2$$

$$\begin{array}{c|c|c} 3x = 2x+1 & -1 = y & 1 = z-1 \\ \hline x = 1 & & 2 = z \end{array}$$

Q5.4



$$d = \sqrt{2}$$

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$$\begin{array}{c|c|c|c} 1,1=0 & 1,2=1 & 1,3=\sqrt{2} & 1,4=1 \\ 2,1=1 & 2,2=0 & 2,3=1 & 2,4=\sqrt{2} \\ 3,1=\sqrt{2} & 3,2=1 & 3,3=0 & 3,4=1 \\ 4,1=1 & 4,2=\sqrt{2} & 4,3=1 & 4,4=0 \end{array}$$

$$\begin{pmatrix} 0 & 1 & \sqrt{2} & 1 \\ 1 & 0 & 1 & \sqrt{2} \\ \sqrt{2} & 1 & 0 & 1 \\ 1 & \sqrt{2} & 1 & 0 \end{pmatrix} \quad (B)$$

$$Q6, \quad A = \begin{bmatrix} -1 \\ 2 \\ 3 \end{bmatrix} \quad B = \begin{bmatrix} 0 \\ -2 \\ 1 \end{bmatrix}$$

(D)

$$\begin{array}{c} \begin{bmatrix} -2 \\ 4 \\ 6 \end{bmatrix} \\ 2A \end{array} - \begin{array}{c} \begin{bmatrix} 0 \\ -2 \\ 1 \end{bmatrix} \\ B \end{array} = \begin{array}{c} \begin{bmatrix} -2 \\ 6 \\ 5 \end{bmatrix} \end{array}$$

Q7.

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

$$A - B^t$$

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

08.

A

A^t

$$\begin{bmatrix} 2 & -1 & 2y \\ x & 0 & -z \\ 4 & 3 & 2 \end{bmatrix} = \begin{bmatrix} 2x & 4 \\ -1 & 0 & 3 \\ 2y & -z & 2 \end{bmatrix}$$

$$\begin{array}{c|c|c} x = -1 & 2y = 4 & -z = 3 \quad (-1) \\ y = 2 & y = 2 & z = -3 \end{array}$$

$$\begin{array}{c} x + y + z \\ (-1) + 2 + (-3) = -2 \end{array} \quad \textcircled{A}$$

09. $A_{ij} = i + j, \text{ if } i \neq j$

$A = 1, \text{ if } i = j$

$B_{ij} = 0, \text{ if } i \neq j$

$B_{ij} = 2i - j, \text{ if } i = j$

$$A = \begin{pmatrix} 1 & 3 \\ 3 & 1 \\ 4 & 5 \end{pmatrix} \quad B = \begin{pmatrix} 1 & 0 \\ 0 & 2 \\ 0 & 0 \end{pmatrix} \quad A+B = \begin{pmatrix} 2 & 3 \\ 3 & 3 \\ 4 & 5 \end{pmatrix}$$

10.

$M = \begin{bmatrix} x & 8 \\ 1 & 0 & y \end{bmatrix}$

$N = \begin{bmatrix} y & 6 \\ 1 & 2x+4 \end{bmatrix}$

$P = \begin{bmatrix} 7 & 16 \\ 23 & 13 \end{bmatrix}$

$\frac{3}{2}M + \frac{2}{3}N = P$

$\frac{3}{2}x + \frac{2}{3}y = 7$

$9x + 4y = 42$

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$\frac{3}{2}y + \frac{2}{3}(2x+4) = 13$

$3y + 2x + 8 = 13$

$9y + 4x + 16 = 73$

$9y + 4x + 16 = 73$

$9y + 4x + 16 - 9x + 4y = 73 - 42$

$9y - 4y + 4x - 9x = 36 - 16$

$5y - 5x = 20$

$5(y - x) = 20$

$y - x = 4$

$y - x = 4$

 \textcircled{B}