Tarefa Básica

1-) $A = \begin{bmatrix} 5 & 8 \\ 7 & 10 \\ 9 & 12 \end{bmatrix}_{3\times2}$ $\quad a_{ij} = 2i + 3j$

2-) $A = \begin{bmatrix} 5 & 17 \\ 8 & 20 \end{bmatrix}$ $\quad A_{ij} = i^2 + 4j^2$

$1 + 4 \qquad 4 + 4$

$1 + 16 \qquad 4 + 16$

(A)

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

$x + 2 = -x$

$x = -1$

$y - 1 = 2y$

$y = -1$

$z + 1 = -2z$

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

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

$-x = y$

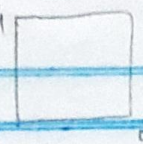
$y = -1$

$3x = 2x + 1$

$x = 1$

$x = z - 1$

$z = 2$

5-) 

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

(B)

6-) $A = \begin{bmatrix} -1 \\ 2 \\ 3 \end{bmatrix} \quad B = \begin{bmatrix} 0 \\ -2 \\ 1 \end{bmatrix}$ (D)

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

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

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

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

$x = -1 \qquad -z = 3 \qquad -1 + 2 + (-3)$
$2y = 4 \qquad z = -3 \qquad -2.$
$y = 2$

(A)

9-) $A = \begin{bmatrix} 1 & 3 \\ 3 & 1 \\ 4 & 5 \end{bmatrix}_{3\times2} \qquad B = \begin{bmatrix} 1 & 0 \\ 0 & 2 \\ 0 & 0 \end{bmatrix}_{3\times2}$

$i + j$, se $i \neq j$ $\qquad$ 0, se $i \neq j$
1, se $i = j$ $\qquad$ $2i - j$, se $i = j$

$$A+B=\begin{bmatrix}2 & 3\\ 3 & 3\\ 4 & 5\end{bmatrix}$$ (C)

10-) $M=\begin{bmatrix}x & 8\\ 10 & y\end{bmatrix}$ $N=\begin{bmatrix}y & 6\\ 12 & x+4\end{bmatrix}$ $P=\begin{bmatrix}7 & 16\\ 23 & 13\end{bmatrix}$

$\begin{bmatrix}3/2x & 12\\ 15 & 3/2y\end{bmatrix}$ $\begin{bmatrix}2/3y & 4\\ 8 & 2/3x+8/3\end{bmatrix}$

$\frac{3}{2}x+\frac{2y}{3}=7 \Rightarrow \frac{9x}{6}+\frac{4y}{6}=\frac{42}{6}$

$\frac{3y}{2}+\frac{2x}{3}+\frac{8}{3}=13 \Rightarrow \frac{9y}{6}+\frac{4x}{6}+\frac{16}{6}=\frac{78}{6}$

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

$9x+4y=42$ $\times -2,25$
$4x+9y=62$

$-20,25x-9y=-94,5$
$4x+9y=62$

$-16,25x=-32,5$
$x=2$

$9y+4\cdot 2=62$
$9y=62-8$
$9y=54$
$y=6$

$y-x=6-2=4$

(B)