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### TAREFA BÁSICA

data  
fecha

data  
fecha

Tarefa Básica

①

$A = (a_{ij})_{3 \times 2}$        $a_{ij} = 2i + 3j$

$\begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \\ a_{31} & a_{32} \end{bmatrix}$        $a_{11} = 2 \cdot 1 + 3 \cdot 1$   
    $a_{11} = 2 + 3$   
    $a_{11} = 5_{//}$

$a_{12} = 2 \cdot 1 + 3 \cdot 2$        $a_{21} = 2 \cdot 2 + 3 \cdot 1$   
 $a_{12} = 2 + 6$        $a_{21} = 4 + 3$   
 $a_{12} = 8_{//}$        $a_{21} = 7_{//}$

$a_{22} = 2 \cdot 2 + 3 \cdot 2$        $a_{31} = 2 \cdot 3 + 3 \cdot 1$   
 $a_{22} = 4 + 6$        $a_{31} = 6 + 3$   
 $a_{22} = 10_{//}$        $a_{31} = 9_{//}$

$a_{32} = 2 \cdot 3 + 3 \cdot 2$   
 $a_{32} = 6 + 6$   
 $a_{32} = 12_{//}$

$A = \begin{bmatrix} 5 & 8 \\ 7 & 10 \\ 9 & 12 \end{bmatrix}$

②

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

$\begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{bmatrix}$        $a_{11} = 1^2 + 4 \cdot 1^2$        $a_{12} = 1^2 + 4 \cdot 2^2$   
    $a_{11} = 1 + 4 \cdot 1$        $a_{12} = 1 + 4 \cdot 4$   
    $a_{11} = 1 + 4$        $a_{12} = 1 + 16$   
    $a_{11} = 5$        $a_{12} = 17$

$$a_{21} = 2^3 + 4 \cdot 1^2$$

$$a_{21} = 4 + 4 \cdot 1$$

$$a_{21} = 4 + 4$$

$$a_{21} = 8$$

$$a_{22} = 2^2 + 4 \cdot 2^2$$

$$a_{22} = 4 + 4 \cdot 4$$

$$a_{22} = 4 + 16$$

$$a_{22} = 20$$

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

③

$$-x + 2 = -x$$

$$x + x = -2$$

$$2x = -2$$

$$x = -2/2$$

$$x = -1$$

$$y - 1 = 2y$$

$$-1 = 2y - y$$

$$-1 = y$$

$$z + 1 = -2z$$

$$z + 2z = -1$$

$$3z = -1$$

$$z = -1/3$$

④

$$3x = 2x + 1$$

$$3x - 2x = 1$$

$$x = 1$$

$$y = -x$$

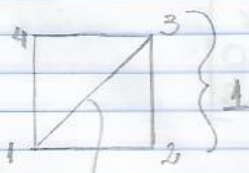
$$y = -1$$

$$1 = z - 1$$

$$1 + 1 = z$$

$$2 = z$$

⑤



$$\sqrt{1^2 + 1^2} = \sqrt{2}$$

$$\begin{bmatrix} a_{11} & a_{12} & a_{13} & a_{14} \\ a_{21} & a_{22} & a_{23} & a_{24} \\ a_{31} & a_{32} & a_{33} & a_{34} \\ a_{41} & a_{42} & a_{43} & a_{44} \end{bmatrix}$$

$$a_{11} = 0$$

$$a_{21} = 1$$

$$a_{31} = \sqrt{2}$$

$$a_{41} = 1$$

$$a_{12} = 1$$

$$a_{22} = 0$$

$$a_{32} = 1$$

$$a_{42} = \sqrt{2}$$

$$a_{13} = \sqrt{2}$$

$$a_{23} = 1$$

$$a_{33} = 0$$

$$a_{43} = 1$$

$$a_{14} = 1$$

$$a_{24} = \sqrt{2}$$

$$a_{34} = 1$$

$$a_{44} = 0$$

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

Alternating (B)

⑥

2A-B

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

Alternativa (D)

⑦

A-B<sup>T</sup>

A-B<sup>T</sup>

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

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

Alternativa (B)

⑧

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

$$x = -1$$

$$y = 2$$

$$z = 3$$

$$x + y + z =$$

$$(-1) + 2 + (-3) = -2$$

Alternativa (A)



9

$$A = (a_{ij})_{3 \times 2}$$

$$B = (b_{ij})_{3 \times 2}$$

$$A =$$

$$i+j \text{ se } i \neq j$$

$$a_{ij} = 1 \text{ se } i = j$$

$$\begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \\ a_{31} & a_{32} \end{bmatrix} = \begin{bmatrix} 1 & 3 \\ 3 & 1 \\ 4 & 5 \end{bmatrix}$$

$$B =$$

$$b_{ij} = 0 \text{ se } i \neq j$$

$$2 \cdot i - j \text{ se } i = j$$

$$\begin{bmatrix} b_{11} & b_{12} \\ b_{21} & b_{22} \\ b_{31} & b_{32} \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & 2 \\ 0 & 0 \end{bmatrix}$$

$$\begin{bmatrix} 1 & 3 \\ 3 & 1 \\ 4 & 5 \end{bmatrix} + \begin{bmatrix} 1 & 0 \\ 0 & 2 \\ 0 & 0 \end{bmatrix} = \begin{bmatrix} 2 & 3 \\ 3 & 3 \\ 4 & 5 \end{bmatrix}$$

Alternativo (c)

10

$$M = \frac{3}{2} \cdot \begin{bmatrix} x & 8 \\ 10 & y \end{bmatrix}$$

$$N = \frac{2}{3} \cdot \begin{bmatrix} y & 6 \\ 9 & x+4 \end{bmatrix}$$

$$M = \begin{bmatrix} 3x & 12 \\ 15 & \frac{3y}{2} \end{bmatrix}$$

$$N = \begin{bmatrix} \frac{2y}{3} & 4 \\ 6 & \frac{2x+8}{3} \end{bmatrix}$$

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

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

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

$$\frac{3y}{2} + \frac{2x+8}{3} = 13$$

$$\frac{9x+4y}{6} = 42$$

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

$$4y = 42 - 9x$$

$$y = \frac{42 - 9x}{4}$$

$$\frac{3y}{2} + \frac{2x+8}{3} = 13$$

$$\frac{3 \cdot (42 - 9x)}{4} + \frac{2x+8}{3} = 13$$

$$\frac{3 \cdot (42 - 9x)}{8} + \frac{2x+8}{3} = 13$$

$$3(126 - 27x) + 8(2x+8) = 312$$

$$442 - 65x = 312$$

$$-65x = 312 - 442$$

$$-65x = -130$$

$$x = -130 / -65$$

$$x = 2 //$$

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

$$2y = 12$$

$$y = 12/2$$

$$y - x =$$

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

$$y = 6 //$$

$$6 - 2 = 4 //$$

Alternativa (B)

$$9 + 2y = 21$$

$$2y = 21 - 9$$