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Turma: **CTII 348**

IFSP - Câmpus Cubatão

Seg Ter Qua Qui Sex Sáb Dom

Tarefa Básica 1

1. $a_{11} = 2 \cdot 1 + 3 \cdot 1$

$a_{11} = 5$

$a_{31} = 2 \cdot 3 + 3 \cdot 1$

$a_{31} = 9$

$a_{12} = 2 \cdot 1 + 3 \cdot 2$

$a_{12} = 8$

$a_{32} = 2 \cdot 3 + 3 \cdot 2$

$a_{32} = 12$

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

$a_{21} = 7$

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

$a_{22} = 2 \cdot 2 + 3 \cdot 2$

$a_{22} = 10$

2. $a_{11} = 1^2 + 4 \cdot 1^2$

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

$a_{12} = 1^2 + 4 \cdot 2^2$

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

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

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

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

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

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

Resposta: alternativa A

3. $x + 2 = -x$

$2x = -2$

$x = -2/2$

$x = -1$

$y - 1 = 2y$

$y = -1$

$2 + 1 = -2z$

$-3 = -2z$

$z = -3/2$

4. $3x = 2x + 1$ $-x = y$ $x = z - 1$

$$\boxed{x = 1}$$

$$\boxed{y = -1}$$

$$1 + 1 = z$$

$$\boxed{z = 2}$$

5. $\text{lado} = 1$ $\text{diagonal} = 1 \cdot \sqrt{2} = \sqrt{2}$

$$a_{11} = 1 - 1$$

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

$$\boxed{a_{12} = 0}$$

$$a_{12} = 1 - 2$$

$$\boxed{a_{24} = 1}$$

$$\boxed{a_{22} = 1}$$

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

Resposta: alternativa B

6. $A = \begin{pmatrix} -1 \\ 2 \\ 3 \end{pmatrix}$ $B = \begin{pmatrix} 0 \\ -2 \\ 1 \end{pmatrix}$ $2A = \begin{pmatrix} -2 \\ 4 \\ 6 \end{pmatrix}$ $B = \begin{pmatrix} 0 \\ -2 \\ 1 \end{pmatrix}$

Resposta: alternativa D

$$2A - B = \begin{pmatrix} -2 \\ 6 \\ 5 \end{pmatrix}$$

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

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

Resposta: alternativa B

$$8. \quad A = \begin{pmatrix} 2 & -1 & 2y \\ x & 0 & -2 \\ 4 & 3 & 2 \end{pmatrix} \quad A^T = \begin{pmatrix} 2 & x & 4 \\ -1 & 0 & 3 \\ 2y & -2 & 2 \end{pmatrix} \quad A = A^T$$

$$\begin{aligned} \underline{x = -1} \quad 2y &= 4 & -2 &= 3 \cdot (-1) & x+y+2 \\ y &= 4/2 = \underline{2} & \underline{2} &= -3 & -1+2-3 = -2 \end{aligned}$$

Resposta: alternativa A

$$9. \quad A = \begin{pmatrix} 1 & 3 \\ 3 & 1 \\ 4 & 5 \end{pmatrix} \quad B = \begin{pmatrix} 1 & 0 \\ 0 & 2 \\ 0 & 0 \end{pmatrix}$$

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

Resposta: alternativa C

$$10. \quad \frac{3}{2}M = \begin{pmatrix} \frac{3x}{2} & 12 \\ 15 & \frac{3y}{2} \end{pmatrix} - \frac{2}{3}N = \begin{pmatrix} \frac{2y}{3} & 4 \\ 8 & \frac{2(x+4)}{3} \end{pmatrix} = P = \begin{pmatrix} 7 & 16 \\ 23 & 13 \end{pmatrix}$$

$$\frac{3x}{2} - \frac{2y}{3} = 7 \quad \text{MMC 6}$$

$$\frac{3y}{2} - \frac{2(x+4)}{3} = 13 \quad \text{MMC 6}$$

$$9x - 4y = 42 \quad \textcircled{I}$$

$$9y - 4x + 16 = 78$$

$$9y - 4x = 62 \quad \textcircled{II}$$

$$\textcircled{II} - \textcircled{I}$$

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

$$5y - 5x = 20$$

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

$$y-x = \frac{20}{5} = \underline{4} \quad \text{Resposta: alternativa B}$$