

$$4) A = \begin{bmatrix} 5 & 2 & 4 \\ 3 & 4 & 4 \end{bmatrix} \quad 2 \times 3 \quad B = \begin{bmatrix} 1 & 3 & 2 \\ 2 & 1 & 2 \\ 4 & 1 & 1 \end{bmatrix} \quad 3 \times 3 \quad C = \begin{bmatrix} c_{11} & c_{12} & c_{13} \\ c_{31} & c_{22} & c_{23} \end{bmatrix}$$

linha 2

coluna 2

$$C_{22} = 9 + 4 + 4 = 17$$

Resposta: letra c

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

$$BC^t = \begin{bmatrix} 8 & 6 \\ 4 & 3 \\ 12 & 9 \end{bmatrix}$$

$$BC = \begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \end{bmatrix}$$

$$BC = \begin{bmatrix} 8 & 4 & 12 \\ 6 & 3 & 9 \end{bmatrix}$$

$$A + BC^t = \begin{bmatrix} 11 & 11 \\ 6 & 4 \\ 12 & -8 \end{bmatrix} \quad 3 \times 2$$

Resposta: letra e

$$4) \det A = \begin{vmatrix} 1 & -1 & 1 \\ -1 & 3 & -2 \\ 1 & -3 & 1 \end{vmatrix}$$

$$\det A = 3 + 3 + 2 - (3 + 1 + 6)$$

$$\det A = 8 - 10 = -2$$

$$\det x = \begin{vmatrix} 5 & -1 & 1 \\ 2 & 3 & -2 \\ 7 & -3 & 1 \end{vmatrix}$$

$$\det x = 15 + 14 - 6 - (21 - 2 + 30)$$

$$\det x = 23 - 49$$

$$\det x = -26$$

$$x = \frac{-26}{-2} \rightarrow x = 13$$

$$\det y = \begin{vmatrix} 1 & 5 & 1 \\ -1 & 2 & -2 \\ 1 & 7 & 1 \end{vmatrix}$$

$$\det y = 2 - 7 - 10 - (2 - 5 - 14)$$

$$\det y = -15 + 17 \rightarrow 2$$

$$y = \frac{2}{-2} = -1$$

$$13 - (-1) + z = 5$$

$$14 + z = 5$$

$$z = 5 - 14$$

$$z = -9$$

$$S = \{(13, -1, -9)\}$$

D S T Q Q S S
D L M M J V S

$$5) \det A = \begin{vmatrix} 0 & -4 & a \\ 4 & 4 & 1 \\ a & -2 & 4 \end{vmatrix} \quad \det A = -2a - a - (a^2 - 4) = 0$$

$$\det A = -3a - a^2 + 4 = 0$$

$$-a^2 - 3a + 4$$

$$\Delta = b^2 - 4 \cdot a \cdot c \quad x = -(-3) \pm \sqrt{\Delta}$$

$$\Delta = -3^2 - 4 \cdot (-4) \cdot 4 \quad 2 \cdot (-4)$$

$$\Delta = 9 - 4 \cdot (-4) \cdot 4$$

$$\Delta = 9 + 16 = 25$$

$$x = \frac{3 \pm 5}{-2}$$

$$x_1 = \frac{3+5}{-2} = \frac{8}{-2} = -4$$

$$x_2 = \frac{3-5}{-2} = \frac{-2}{-2} = 1$$

$$SPD = \det A \neq -4 \text{ e } 1$$