

# Tarefa Básica

$$\textcircled{1} a) \begin{array}{|c|c|} \hline 2 & 3 \\ \hline 1 & 5 \\ \hline \end{array} = 10 - 3 = 7$$

3  
10

$$b) \begin{array}{|c|c|} \hline -2 & -4 \\ \hline 3 & 6 \\ \hline \end{array} = -12 - (-12) = 0$$

-12  
-12

$$c) \begin{array}{|c|c|c|} \hline 3 & -1 & 1 \\ \hline 2 & 1 & -1 \\ \hline 1 & 4 & -2 \\ \hline \end{array} = 3 - (-7) = 10$$

$1 - 12 + 4 = -7$   
 $-6 + 1 + 8 = 3$



$$-3+3+16$$

$$d) \begin{vmatrix} 3 & 2 & -1 & 3 & 2 \\ 2 & 3 & 1 & 2 & 3 \\ 1 & 1 & 4 & 1 & 1 \end{vmatrix} = 36 - 16 = 20$$

$$36 + 2 - 2 = 36$$

$$0 + 0 + 0 = 0$$

$$\textcircled{2} A = \begin{vmatrix} -3 & 0 & 0 & -3 & 0 \\ 0 & -3 & 0 & 0 & -3 \\ 0 & 0 & -3 & 0 & 0 \end{vmatrix} = -27 - 0 = -27$$

$$-27 + 0 + 0 = -27$$

$$-3, \text{ se } i=j$$

$$0, \text{ se } i \neq j$$

Alternativa (A)

$$x^2 + 12x + 9$$

$$\textcircled{3} \begin{vmatrix} x & 1 & x & x & 1 \\ 3 & x & 4 & 3 & x \\ 1 & 3 & 3 & 1 & 3 \end{vmatrix}$$

$$3x^2 + 9x + 4 - (x^2 + 12x + 9) = -3$$

$$3x^2 + 9x + 4 - x^2 - 12x - 9 = -3$$

$$2x^2 - 3x - 5 = -3$$

$$2x^2 - 3x - 2 = 0$$

$$3x^2 + 4 + 9x$$

$$\Delta = 9 - 4 \cdot 2 \cdot -2$$

$$\Delta = 25$$

$$x = \frac{3 \pm 5}{4} \rightarrow x' = 2$$

$$x'' = -\frac{1}{2}$$

Alternativa (E)

$$0 + x - 1 + 0$$

$$\textcircled{4} \begin{vmatrix} x-1 & -1 & 0 & x-1 & -1 \\ 0 & x+1 & -1 & 0 & x+1 \\ 2 & -1 & x+1 & 2 & -1 \end{vmatrix}$$

$$x^3 + x^2 - x - 1 + 2 + 0$$

$$(x-1)(x+1) = x^2 - 1$$

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



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

$$x^3 + x^2 - x - 1 + 2 - x + 1 = 2$$

$$x^3 + x^2 - 2x = 0$$

$$x(x^2 + x - 2) = 0$$

$$x = 0$$

$$\Delta = 1 - 4 \cdot 1 \cdot -2$$

$$\Delta = 9$$

$$x = \frac{-1 \pm 3}{2}$$

$$x' = 1$$

$$x'' = -2$$

$$x^2 + x - 2 = 0$$

Alternativa (C)

$$0 + 1 - 2 = -1$$

$$\textcircled{5} A = \begin{bmatrix} -1 & -4 \\ 1 & -2 \\ 3 & 0 \end{bmatrix}$$

$$a_{ij} = 2i - 3j$$

$$B = \begin{bmatrix} 0 & 1 & 2 \\ -1 & 0 & 1 \end{bmatrix}$$

$$b_{jk} = k - j$$

$$B = \begin{bmatrix} 0 & 1 & 2 \\ -1 & 0 & 1 \end{bmatrix}$$

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

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

$$0 + 0 - 12$$

$$\begin{vmatrix} 4 & -1 & -6 & 4 & -1 \\ 2 & 1 & 0 & 2 & 1 \\ 0 & 3 & 6 & 0 & 3 \end{vmatrix}$$

$$= -12 - (-12) = 0$$

$$24 + 0 - 36 = -12$$

Alternativa (C)

$\textcircled{6}$

$$B = \begin{bmatrix} 1 & -1 \\ -1 & 1 \\ 0 & 2 \end{bmatrix}$$

$$A = \begin{bmatrix} 2 & 0 & -1 \\ -1 & 1 & 0 \end{bmatrix}$$

$$A \cdot B = \begin{bmatrix} 2 & -4 \\ -2 & 2 \end{bmatrix}$$

$$\begin{vmatrix} 2 & -4 \\ -2 & 2 \end{vmatrix} = 4 - 8 = -4$$

Alternativa (D)