

TARIFA BÁSICA - DETERMINANTES

① A $\begin{bmatrix} 2 & 3 \\ 1 & 5 \end{bmatrix}$ $DET = 10 - 3 = 7$

② B $\begin{bmatrix} -2 & -4 \\ 3 & 6 \end{bmatrix}$ $DET = -12 - (-12) = 0$

③ C $\begin{bmatrix} 3 & -7 & 2 \\ 2 & 1 & -7 \\ 1 & 4 & -2 \end{bmatrix}$ $DET = 3 - (-7) = 10$

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

④ D $\begin{bmatrix} 3 & 2 & -1 \\ 2 & 3 & 1 \\ 1 & 1 & 4 \end{bmatrix}$ $DET = 36 - (+18) = 20$

$36 + 24 + (-2) = 36$

⑤ E $\begin{bmatrix} -3 & 0 & 0 \\ 0 & -3 & 0 \\ 0 & 0 & -3 \end{bmatrix}$ $DET = 0 + 0 + 0 = 0$

$\begin{matrix} & \swarrow 10 \\ & -12 \\ \textcircled{B} & \begin{bmatrix} -2 & -4 \\ 3 & 6 \end{bmatrix} \end{matrix}$
 $\text{DET} = -12 - (-12) = 0$

$\textcircled{C} \begin{bmatrix} 3 & -7 & 1 & 3 & -1 \\ 2 & 1 & -7 & 2 & 1 \\ 1 & 4 & -2 & 1 & 4 \end{bmatrix}$
 $\text{DET} = 3 - (-7) = 10$

$\begin{matrix} \swarrow -6 + 1 + 8 = 3 \\ \swarrow 1 + (-12) + 4 = -7 \end{matrix}$

$\textcircled{D} \begin{bmatrix} 3 & 2 & -1 & 3 & 2 \\ 2 & 3 & 1 & 2 & 3 \\ 1 & 1 & 4 & 1 & 1 \end{bmatrix}$
 $\text{DET} = 36 - (+16) = 20$

$36 + 21(-2) = 30$

$\textcircled{2} \begin{bmatrix} -3 & 0 & 0 & -3 & 0 \\ 0 & -3 & 0 & 0 & -3 \\ 0 & 0 & -3 & 0 & 0 \end{bmatrix}$
 $\text{DET} = -27$ ALTERNATIVA A

$-27 + 0 + 0 = -27$

③

$$\begin{array}{|c|c|c|c|c|} \hline x^2 & +12x & +9 \\ \hline x & 1 & x & 1 \\ \hline 3 & x & 4 & 3 & x \\ \hline 1 & 3 & 3 & 1 & 3 \\ \hline \end{array}$$

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

$$\text{DET} = \left\{ -\frac{1}{2}; 2 \right\}$$

ALTERNATIVA E

$$\text{DET} = (3x^2 + 4 + 9x) - (x^2 + 12x + 9) = -3$$

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

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

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

$$\Delta = B^2 - 4AC$$

$$\Delta = 3^2 - 4 \cdot 2 \cdot 2$$

$$\Delta = 9 - 16$$

$$\Delta = -7$$

$$\text{DET} = 3 \pm \sqrt{25} \rightarrow x^1 = 3 + 5 = 8 = 2$$

$$2.2 \downarrow$$

$$x^2 = 3 - 5 = -2 = -1$$

$$\frac{4}{4} \quad \frac{4}{4} \quad \frac{2}{2}$$

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

$$A_{12} = 2i - 3j$$

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

$$A_{11} = 2 \cdot 1 - 3 \cdot 1 = -1$$

$$B_{11} = 1 - 1 = 0$$

$$A_{12} = 2 \cdot 1 - 3 \cdot 2 = -4$$

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

$$A_{21} = 2 \cdot 2 - 3 \cdot 1 = 1$$

$$B_{13} = 3 - 1 = 2$$

$$A_{22} = 2 \cdot 2 - 3 \cdot 2 = -2$$

$$B_{21} = 1 - 2 = -1$$

$$A_{31} = 2 \cdot 3 - 3 \cdot 1 = 3$$

$$B_{22} = 2 - 2 = 0$$

$$A_{32} = 2 \cdot 3 - 3 \cdot 2 = 0$$

$$B_{23} = 3 - 2 = 1$$

$$AB =$$

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

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

$$AB = \begin{bmatrix} 0+4 & -1+0 & -2+1 \\ 0+2 & 1+0 & 2-2 \\ 0-0 & 3+0 & 6+0 \end{bmatrix}$$

$$0+0-12$$

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

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

$$\text{DET} = -12 - (-12) = 0$$

ALTERNATIVA E

6

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

B =

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

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

✓

$$AB = \begin{bmatrix} 2 & -4 \\ -2 & 2 \end{bmatrix}$$

8
4

$$\text{DET} = 4 - 8 = -4$$

ALTERNATIVA D