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Determinantes - matrizes de ordem 1, 2 ou 3

01-a) $\begin{bmatrix} 2 & 3 \\ 1 & 5 \end{bmatrix}$ determinante $= 10 - 3 = 7$

01-b) $\begin{bmatrix} -2 & -4 \\ 3 & 6 \end{bmatrix}$ determinante $= -12 - (-12) = -12 + 12 = 0$

01-c)

$8/3$ $3 - (-7)$ determinante $= 10$

01-D)

determinante $= 36 - 16 = 20$

02) $A = \begin{bmatrix} a11 & a12 & a13 \\ a21 & a22 & a23 \\ a31 & a32 & a33 \end{bmatrix}$ $a_{ij} \begin{cases} -3, & \text{se } i = j \\ 0, & \text{se } i \neq j \end{cases}$

$A = \begin{bmatrix} -3 & 0 & 0 \\ 0 & -3 & 0 \\ 0 & 0 & -3 \end{bmatrix}$ determinante $= -27$

3)

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

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

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

$x^2 \quad 12x \quad 9 \quad 3x$

5) $A = (aij)_{3 \times 2} \quad aij = 2i - 3j \quad B = (bjk)_{2 \times 3} \quad bjk = k - j$

$$A = \begin{vmatrix} a11 & a12 \\ a21 & a22 \\ a31 & a32 \end{vmatrix} \quad \begin{matrix} aij = 2 \cdot 1 - 3 \cdot 1 = -1 \\ aij = 2 \cdot 2 - 3 \cdot 1 = 1 \\ 2 \cdot 3 - 3 \cdot 1 = 3 \end{matrix} \quad \begin{matrix} 2 \cdot 1 - 3 \cdot 2 = -4 \\ 2 \cdot 2 - 3 \cdot 2 = -2 \\ 2 \cdot 3 - 3 \cdot 2 = 0 \end{matrix} \quad \begin{vmatrix} -1 & -4 \\ 1 & -2 \\ 3 & 0 \end{vmatrix}$$

$$B = \begin{vmatrix} b11 & b12 & b13 \\ b21 & b22 & b23 \end{vmatrix} \quad \begin{matrix} bjk = 1 - 1 = 0 & 2 - 1 = 1 & 3 - 1 = 2 \\ 1 - 2 = -1 & 2 - 2 = 0 & 3 - 2 = 1 \end{matrix} \quad \begin{vmatrix} 0 & 1 & 2 \\ -1 & 0 & 1 \end{vmatrix}$$

$$A \cdot B \begin{vmatrix} 4 & -1 & -6 \\ 2 & 1 & 0 \\ 0 & 3 & 6 \end{vmatrix} \quad A \cdot B = 0 \quad R = \text{letra c}$$