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Particularidades sobre produto matricial

01. $A = m \cdot n \quad B = p \cdot q$ (A)

$A = \begin{bmatrix} a^{11} \\ a^{21} \\ a^{31} \end{bmatrix} \rightarrow A^t = \begin{bmatrix} a^{11} & a^{12} & a^{13} \end{bmatrix}$

$(A^t)^t = \begin{bmatrix} a^{11} \\ a^{21} \\ a^{31} \end{bmatrix}$ $\quad \boxed{(A^t)^t = A}$

$(B^t)^t = B$

02. $NC = NL \Rightarrow E$ (D)

. por associação $(A.B).C = A(B.C)$

03. gramas usadas $\begin{matrix} d \\ c \end{matrix} \begin{bmatrix} 5 & 8 & 10 \\ 9 & 6 & 4 \end{bmatrix} \cdot \begin{bmatrix} x \\ y \\ z \end{bmatrix}$ preços por grama (produto) (B)

d = dengue-3x/c = chicungunha-3x

04. $A \cdot \begin{bmatrix} -1 \\ 2 \\ 4 \end{bmatrix} = \begin{bmatrix} 1 \\ 0 \\ 0 \end{bmatrix} \cdot \begin{bmatrix} a & d & g \\ b & e & h \\ c & f & i \end{bmatrix}$ (C)

$\begin{bmatrix} a \\ b \\ c \end{bmatrix} = \begin{bmatrix} -1 \\ 2 \\ 4 \end{bmatrix}$

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Multiplicação de Matrizes

01. $AB = \begin{bmatrix} -3-1 & 6+3 & 0-4 \\ 0+2 & 0-6 & 0+8 \end{bmatrix} = \begin{bmatrix} -4 & 9 & -4 \\ 2 & -6 & 8 \end{bmatrix}$

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

$BA = (\nexists)$

02. $A \cdot B = \begin{bmatrix} 15+2+4 & -10-6\,0 \\ 21+4-12 & -14-12\,0 \end{bmatrix} = \begin{bmatrix} 21 & -16 \\ 13 & -26 \end{bmatrix}$

$B \cdot A = \begin{bmatrix} 15-14 & 6-8 & -3+9 \\ 5-21 & 2-12 & -1-9 \\ -20\,0 & -8\,0 & +4\,0 \end{bmatrix} = \begin{bmatrix} 1 & -2 & -9 \\ -16 & -10 & -10 \\ -20 & -8 & 4 \end{bmatrix}$

03. $A = \begin{bmatrix} -1 & 0 \\ 1 & 2 \end{bmatrix}$ $A^t = \begin{bmatrix} -1 & 1 \\ 0 & 2 \end{bmatrix}$ $A \cdot A^t = \begin{bmatrix} +1 & 0 & -1\,0 \\ -1\,0 & 2\,4 \end{bmatrix}$

$A \cdot A^t = \begin{bmatrix} +1 & -1 \\ -1 & 5 \end{bmatrix}$

(B)

04. $C = A \cdot B$ $C = \begin{bmatrix} 1+4+15 \\ 3+8+18 \end{bmatrix} = \begin{bmatrix} 20 \\ 29 \end{bmatrix}$

(A)

06. $\begin{bmatrix} 0 & -1 \\ a & 1 \end{bmatrix} \cdot \begin{bmatrix} a & 1 \\ -1 & 0 \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ → $a^2 - 1 = 0$

$a^2 = 1$

$a = \sqrt{1}$

$\boxed{a = 1}$

(E)

$\begin{bmatrix} a0+1 & 0+0 \\ aa-1 & 1a+0 \end{bmatrix}$