Nome: Amanda Chen Zhen CTII348

$0 + (-1) + 0 = -1$

1. $A = \begin{vmatrix} 1 & 0 & 0 \\ 0 & 1 & 1 \\ 0 & -1 & 1 \end{vmatrix} \begin{matrix} 1 & 0 \\ 0 & 1 \\ 0 & -1 \end{matrix}$ $\rightarrow$ $\det A = 1 - (-1) = 2$

$1 + 0 + 0 = 1$

$B = \begin{vmatrix} 1 & 0 & 0 & 3 \\ 0 & 1 & -1 & 4 \\ 0 & 0 & 0 & 3 \\ 0 & 1 & 1 & 4 \end{vmatrix}$ $1 \cdot cof(B_{11})$ [illegible]

$1+1=2$

Par → permanece o sinal

→ escolhida

$1 \cdot cof(B_{11})$ $0 \cdot cof(B_{21})$ $\cancel{0 \cdot cof(B_{31})}$ $\cancel{0 \cdot cof(B_{41})}$

sempre dá 0

$0 + 3 + 0 = 3$

$\begin{vmatrix} 1 & -1 & 4 \\ 0 & 0 & 3 \\ 1 & 1 & 4 \end{vmatrix} \begin{matrix} 1 & -1 \\ 0 & 0 \\ 1 & 1 \end{matrix}$ $\rightarrow 3 \cdot -(-3) = -6$

$0 + (-3) + 0 = -3$

$1 \cdot (-6) = -6$

$a \cdot cof(B_{21})$

$0+0+0=0$

$$\left|\begin{array}{ccc|cc} 0 & 0 & 3 & 0 & 0 \\ 0 & 0 & 3 & 0 & 0 \\ 1 & 1 & 4 & 1 & 1 \end{array}\right| \rightarrow 0-0=0$$

$0+0+0=0$

$1 \cdot cof(B_{11}) + a \cdot cof(B_{21})$

$1 \cdot (-6) + a \cdot 0$

R: -6

$$2.\ A = \begin{vmatrix} x^2 & 0 & x & -\frac{1}{10} \\ 7,5 & 0 & 5 & 2 \\ 10 & 0 & 4 & 2 \\ 1 & 1 & 1 & 1 \end{vmatrix} = 0$$

escolhido

$1 \cdot cof(A_{42})$

$-5 + 8x^2 + 15x$

$$\begin{vmatrix} x^2 & x & -\frac{1}{10} \\ 7,5 & 5 & 2 \\ 10 & 4 & 2 \end{vmatrix} \begin{matrix} x^2 & x \\ 7,5 & 5 \\ 10 & 4 \end{matrix} = 0$$

$10x^2 + 20x - 3$

$Det.\ A = 10x^2 + 20x - 3 - 8x^2 - 15 + 5 = 2x^2 + 5x + 2$

$2x^2 + 5x + 2 = 0$

$\Delta = b^2 - 4ac$

$\Delta = 5^2 - 4 \cdot 2 \cdot 2$

$\Delta = 25 - 16$

$\Delta = 9$

$x = \dfrac{-b \pm \sqrt{\Delta}}{2a}$

$x = \dfrac{-5 \pm 3}{4}$

$x' = \dfrac{-5+3}{4}$ $\quad x'' = \dfrac{-5-3}{4}$

$x' = \dfrac{-2}{4}^{\div 2} = \dfrac{-1}{2}$ $\quad x'' = \dfrac{-8}{4} = -2$

3. $A = \begin{vmatrix} x & 0 & 0 & 3 \\ -1 & x & 0 & 0 \\ 0 & -1 & x & 1 \\ 0 & 0 & -1 & -2 \end{vmatrix}$

↳ escolhido

$x \cdot cof(a_{11})$

$0 - x + 0 = -x$

$$\left|\begin{matrix} x & 0 & 0 \\ -1 & x & 1 \\ 0 & -1 & -2 \end{matrix}\right| \begin{matrix} x & 0 \\ -1 & x \\ 0 & -1 \end{matrix}$$

$\rightarrow -2x^2 - (-x) = -2x^2 + x$

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

$x \cdot (-2x^2 + x)$

$-2x^3 + x^2$

$-1 \cdot cof(a_{21})$ $\quad$ $2+1=3$ (Ímpar = Inverte o sinal)

$0+0+0=0$

$$\left|\begin{array}{ccc|cc} 0 & 0 & 3 & 0 & 0 \\ -1 & x & 1 & -1 & x \\ 0 & -1 & 2 & 0 & -1 \end{array}\right| \rightarrow 3-0=3 \downarrow -3$$

$0+0+3=3$

$-1 \cdot (-3)$

3

$(x \cdot cof(a_{11})) + (-1 \cdot cof(a_{21}))$

$-2x^3+x^2+3$

B = A

4.

$$A = \begin{vmatrix} x & 1 & 0 & 0 & 0 \\ 0 & x & 1 & 0 & 0 \\ 0 & 0 & x & 1 & 0 \\ 0 & 0 & 0 & x & k \\ 0 & 0 & 0 & 1 & x \end{vmatrix} \rightarrow x \cdot cof(A_{11})$$

↳ escolhido

$$B = \begin{vmatrix} x & 1 & 0 & 0 \\ 0 & x & 1 & 0 \\ 0 & 0 & x & k \\ 0 & 0 & 1 & x \end{vmatrix} \rightarrow x \cdot cof(B_{11})$$

↳ escolhido

$$C = \begin{vmatrix} x & 1 & 0 \\ 0 & x & k \\ 0 & 1 & x \end{vmatrix}$$

$0+k \cdot x+0=k \cdot x$

$$\left|\begin{array}{ccc|cc} x & 1 & 0 & x & 1 \\ 0 & x & k & 0 & x \\ 0 & 1 & x & 0 & 1 \end{array}\right| \rightarrow Det\ C = x^3-(k \cdot x) = x^3-xk$$

$x^3+0+0=x^3$

$a \cdot cof(B_{21})$

$$\left|\begin{array}{ccc|cc} 0 & 0 & 3 & 0 & 0 \\ 0 & 0 & 3 & 0 & 0 \\ 1 & 1 & 4 & 1 & 1 \end{array}\right|$$

$0+0+0=0$

$\rightarrow 0-0=0$

$0+0+0=0$

$1 \cdot cof(B_{11}) + a \cdot cof(B_{21})$

$1 \cdot (-6) + a \cdot 0$

R: -6

R: D.