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Turma: **CTII 348**

IFSP - Câmpus Cubatão

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Seg | Ter | Qua | Qui | Sex | Sáb | Dom

Tarefa Básica 4

1.

$$A = \begin{vmatrix} 1 & a & 0 \\ 0 & 1 & 1 \\ 0 & -1 & 1 \end{vmatrix} \begin{matrix} 1 & a \\ 0 & 1 \\ 0 & -1 \end{matrix}$$

$$1 - (-1) = \boxed{2}$$

$$B = \begin{vmatrix} 1 & 0 & 0 & 3 \\ a & 1 & -1 & 4 \\ 0 & 0 & 0 & 3 \\ 0 & 1 & 1 & 4 \end{vmatrix}$$

0. cof (12)   1. cof (22)   0. cof (32)   1. cof (42)

1 . cof (22)   1 . cof (42)

1.

$$\begin{vmatrix} 1 & 0 & 3 \\ 0 & 0 & 3 \\ 0 & 1 & 4 \end{vmatrix} \begin{matrix} 1 & 0 \\ 0 & 0 \\ 0 & 1 \end{matrix}$$

1.

$$\begin{vmatrix} 1 & 0 & 3 \\ a & -1 & 4 \\ 0 & 0 & 3 \end{vmatrix} \begin{matrix} 1 & 0 \\ a & -1 \\ 0 & 0 \end{matrix}$$

$$0 - 3 = \underline{-3}$$

$$-3 - 0 = \underline{-3}$$

$$(1 . -3) + (1 . -3)$$

$$-3 - 3 = \boxed{-6}$$

$$\boxed{\det A = 2} \qquad \boxed{\det B = -6}$$

2.

x^2	0	x	$-\frac{1}{10}$	
7,5	0	5	2	= 0
10	0	4	2	
1	1	1	1	

1. col (42)

1. col (42) $^{+\to}$ por

$$-5 \qquad 8x^2 \qquad 15x = 8x^2 + 15x - 5$$

x^2	x	$-\frac{1}{10}$	x^2	x
7,5	5	2	7,5	5
10	4	2	10	4

$$10x^2 \qquad 20x \qquad -3 \qquad = 10x^2 + 20x - 3$$

$$10x^2 + 20x - 3 - (8x^2 + 15x - 5) = 0$$

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

$$-0{,}5 + -2 = -2{,}5$$

$$-0{,}5 \cdot -2 = 1$$

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

3.

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

$x \cdot cof(11) \qquad -1 \cdot cof(21)$

$x \cdot cof(11) \quad {}^{+ \to par}$

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

$-2x^2 - (-x)$

$-2x^2 + x$

$-1 \cdot cof(21) \quad {}^{+ \to ímpar}$

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

$3 - 0$

$3 \to ímpar \to -3$

$x \cdot (-2x^2 + x) + (-1 \cdot -3)$

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

(A)

4.

$$
\begin{vmatrix}
x & 1 & 0 & 0 & 0 \\
0 & x & 1 & 0 & 0 \\
0 & 0 & x & 1 & 0 \\
0 & 0 & 0 & x & K \\
0 & 0 & 0 & 1 & x
\end{vmatrix}
$$

$f(x) = \det A$

$f(x) = x^5 - Kx^3$

$\rightarrow f(-2) = 8$

$8 = (-2)^5 - K \cdot (-2)^3$

$\downarrow$

$x \cdot cof\,(11)$

$x \cdot cof\,(11)$

$$
\begin{vmatrix}
x & 1 & 0 & 0 \\
0 & x & 1 & 0 \\
0 & 0 & x & K \\
0 & 0 & 1 & x
\end{vmatrix}
\rightarrow
\begin{vmatrix}
x & 1 & 0 \\
0 & x & K \\
0 & 1 & x
\end{vmatrix}
\begin{vmatrix}
x & 1 \\
0 & x \\
0 & 1
\end{vmatrix}
$$

Kx

x^3

$x \cdot (x^4 - Kx^2)$ $x \cdot (x^3 - Kx)$

$x^5 - Kx^3$ $x^4 - Kx^2$

$8 = (-2)^5 - K \cdot (-2)^3$

$8 = -32 - K \cdot -8$

$8 = -32 + 8K$

$8K = 8 + 32$

$K = \dfrac{40}{8}$

$\boxed{K = 5}$ ①