

✿ 27 · 05 · 2021

Tarefa Básica

1) $A = \begin{vmatrix} 1 & 0 & 0 \\ 0 & 1 & 1 \\ 0 & 1 & 1 \end{vmatrix}$

~~$\begin{vmatrix} 1 & 1 \\ -1 & 1 \end{vmatrix}$~~

$\det A = 1 - (-1) = 2$

2) $B = \begin{vmatrix} 1 & 0 & 0 & 3 \\ 0 & 1 & 1 & 4 \\ 0 & 0 & 0 & 3 \\ 0 & 1 & 1 & 4 \end{vmatrix}$ 1. $\det(a_{22})$

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

$0 - (+3) = -3$

$0 \ 3 \ 0 \ 0 \ 0$

~~$\begin{vmatrix} 1 & 0 & 3 & 1 & 0 \\ 0 & 1 & 4 & 0 & -1 \\ 0 & 0 & 3 & 0 & 0 \end{vmatrix}$~~ 1. $\det(a_{42})$

$-3 - 0 = -3$

$0 \ 0 \ 0 \ -3 \ 0 \ 0$

$(-3) + (-3) = -6 \rightarrow \det B$



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

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

1. ~~$\begin{vmatrix} x^2 & x & -\frac{1}{10} & x^2 & x \\ 7,5 & 5 & 2 & 7,5 & 5 \\ 10 & 4 & 2 & 10 & 4 \end{vmatrix}$~~ $(10x^2 + 20x - 3) - (8x^2 + 15x)$
 $2x^2 + 5x + 2 = 0$
 $10x^2 + 20x - 3 = 0$

$\Delta = (5)^2 - 4 \cdot 2 \cdot 2 \quad x = \frac{-5 \pm \sqrt{9}}{2 \cdot 2}$

$\Delta = 25 - 16$

$\Delta = 9$ $x = \frac{-5 \pm 3}{4}$

$x' = \frac{-5 + 3}{4} = \frac{-2}{4} = -\frac{1}{2}$

$x'' = \frac{-5 - 3}{4} = \frac{-8}{4} = -2$

$$3) \begin{array}{ccc|c} x & 0 & 0 & 3 \\ -1 & x & 0 & 0 \\ 0 & -1 & x & 1 \\ 0 & 0 & 1 & 2 \end{array}$$

→ 21. column

$x \cdot \text{row}(1)$

$0 - x \ 0$

$$\begin{array}{ccc|ccc} x & 0 & 0 & x & 0 & \\ -1 & x & 0 & -1 & x & 0 \\ 0 & -1 & x & 0 & -1 & x \\ 0 & 0 & 1 & 0 & 0 & 2 \end{array}$$

$$-2x^2 \ 0 \ 0$$

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

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

$$(A) - 2x^3 + x^2 + 3$$

$-1 \cdot \text{row}(2) + 3$

→ 21. column

$$\begin{array}{ccc|ccc} 0 & 0 & 3 & 0 & 0 & \\ -1 & x & 1 & -1 & x & 3 \\ 0 & -1 & x & 0 & -1 & x \\ 0 & 0 & 1 & 0 & 0 & 2 \end{array}$$

$$(-1) \cdot -3 = 3$$

$$4) \begin{array}{ccccc|c} x & 1 & 0 & 0 & 0 & \\ 0 & x & 1 & 0 & 0 & \\ 0 & 0 & x & 1 & 0 & \\ 0 & 0 & 0 & x & k & \\ 0 & 0 & 0 & 1 & x & \end{array} = x^3(x^2 - k)$$

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

$$f(-2) = (-2)^5 - k(-2)^3 = 8 \rightarrow k = 5 \text{ detra } 1$$

$$f(-2) = -32 + 8k = 8$$

$$f(-2) = 8k = 8 + 32$$

$$f(-2) = 8k = 40$$

$$f(-2) = k = \frac{40}{8}$$