

## TAREFA: CÁLCULO GERAL DE DETERMINANTES. 50

01.  $0 - 1 + 0 = -1$

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

$$1 - (-1) = 2 //$$

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

$$1 + 0 + 0 = 1$$

$$0 + 1 + 1 + 4$$

//

1.  $\text{cop}(a_{22})$  Par

$$0 + 3 + 0 = 3$$

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

1.  $0 - 3 = -3$

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

$$0 + 0 + 0 = 0$$

$$1 \cdot -3 = -3$$

1.  $\text{cop}(a_{42})$  Par

$$0 + 0 + 0 = 0$$

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

1.  $-3 - 0 = -3$

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

$$-3 + 0 + 0 = -3$$

$$-3 \cdot 1 = -3$$

$$\text{Det } B = -3 + (-3) = -6 //$$

02.

$$\begin{array}{c|cc|cc}
 x^2 & 0 & x & -1/10 & \\
 \hline
 7,5 & 0 & 5 & 2 & = 0 \\
 10 & 0 & 4 & 2 & \\
 1 & 1 & 1 & 1 & 
 \end{array}$$

1.  $\text{cop}(a_4, 2)$  Par

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

$$\begin{array}{c|cc|cc}
 1. & x^2 & x & -1/10 & x^2 & x \\
 \hline
 & 7,5 & 5 & 2 & 7,5 & 5 \\
 & 10 & 4 & 2 & 10 & 4
 \end{array}$$

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

$$10x^2 + 20x - 3 - 8x^2 - 15x + 5$$

$$10x^2 + 20x - 3 \rightarrow$$

$$2x^2 + 5x + 2$$

$$2x^2 + 5x + 2$$

a: 2

b: 5

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

$$x_1 = \frac{-5 + 3}{4} = \frac{-2}{4} = -0,5 \text{ ou } -\frac{1}{2}$$

c: 2

$$A = 25 - 16$$

$$\Delta = \sqrt{9}$$

$$\Delta = 3$$

$$x_2 = \frac{-5 - 3}{4} = \frac{-8}{4} = -2$$

$$x = -2 \text{ ou } x = -\frac{1}{2}$$

03.

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

 $x \cdot \text{cop}(a_{11})$  Par

$$0 - x - 0 = -x$$

$$x \cdot \begin{array}{ccc|ccc} x & 0 & 0 & x & 0 & 0 \\ -1 & x & 1 & 1 & x & 0 \\ 0 & -1 & -2 & 0 & -1 & 0 \end{array} \quad -2x^2 - (-x) =$$

$$-2x^2 + x$$

$$0 - 1 - 2 \quad 0 - 1$$

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

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

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

 $-1 \cdot \text{cop}(a_{21})$  Impar

$$0 + 0 + 0 = 0$$

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

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

$$0 - 1 - 2 \quad 0 - 1$$

$$0 + 0 + 3 = 3$$

$$-1 \cdot -3 = 3$$

$$\text{DET} = -2x^3 + x^2 + 3$$

(A)



04.

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$$A = \begin{pmatrix} x & 1 & 0 & 0 & 0 \\ 0 & x & 1 & 0 & 0 \\ 0 & 0 & x & 1 & 0 \\ 0 & 0 & 0 & x & k \\ 0 & 0 & 0 & 1 & x \end{pmatrix} \quad \begin{aligned} f(x) &= \det A \\ f(-2) &= 8 \end{aligned}$$

 $x \cdot \text{coef}(a_{11})$  Par $x \cdot \text{coef}(a_{11})$  Par

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

$$x \cdot \begin{pmatrix} x & 1 & 0 & 0 \\ 0 & x & 1 & 0 \\ 0 & 0 & x & k \\ 0 & 0 & 1 & x \end{pmatrix}$$

$$x = \begin{pmatrix} x & 1 & 0 \\ 0 & x & k \\ 0 & 1 & x \end{pmatrix} \quad \begin{aligned} x^3 - k \cdot x \\ x^3 + 0 + 0 = x^3 \end{aligned}$$

$$x \cdot (x^3 - k \cdot x) \\ x^4 - kx^2 //$$

$$f(x) = \det A$$

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

$$x(x^4 - x^2 \cdot k) \\ x^5 - x^3 k$$

$$\begin{aligned} f(-2) &= 2 \cdot 5 - (-2)^3 = 8 \\ f(-2) &= -32 + 8k = 8 \end{aligned}$$

$$32 + 8k = 8$$

$$-8k = -32 - 8 \quad ( \cdot -1 )$$

$$8k = 32 + 8$$

$$8k = 40$$

$$k = \frac{40}{8}$$

$$k = 5$$

(A)

(D)