S T Q Q S S D

__/__/__

tarefa básica

CALCULO GERAL DE DETERMINANTES

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

escolhida

1 cof(a_{11})

1. $\begin{vmatrix} 1 & 1 \\ -1 & 1 \end{vmatrix}$ ▷ $1-(-1)=2$

$-1 \qquad 1$

~~0. cof(a_{21})~~

~~0. cof(a_{31})~~

detA = 2

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

escolhida

1. cof(b_{11})

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

$0+3+0=3 \qquad 0-3+0=-3$

$-3-3=-6$

α. cof(b_{21})

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

$0+0+0=\cancel{0} \qquad 0+0+0=\cancel{0}$

$0-0=\cancel{0}$

- Resposta = detA = 2 e detB = −6

detB = −6

__/__/__

S T Q Q S S D

(2)

x^2	~~0~~	x	-1/10
7,5	~~0~~	5	2
10	~~0~~	4	2
1	1	1	1

escolhida

= 0

▷ 1. cof (a12)

1.	x^2	x	-1/10	x^2	x
	7,5	5	2	7,5	5
	10	4	2	10	4

$-5\not0/10 + 8x^2 + 15x \quad . \quad 10x^2 + 20x - 3\not0/10$

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

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

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

$a = 2 \quad b = 5 \quad c = 2$

$\Delta\ b^2 - 4.a.c$

$\Delta\ 5^2 - 4.2.2$

$\Delta\ 25 - 16$

$\Delta = 9$

$x = \frac{-b \pm \sqrt{9}}{2.a}$

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

$x' = -5 - 3/4 = (-2)$

$x'' = -5 + 3/4 = (-1/2)$

$x = \{-1,2 ; 2\}$

(3)

x	0	0	3
-1	x	0	0
0	-1	x	1
0	0	-1	-2

escolhida

▷ x. cof (a11) 0 −x +0

x.	x	0	0	x	0
	-1	x	1	-1	x
	0	-1	-2	0	-1

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

$x.(-2x^2 + x)$

$-2x^2 + 0 + 0$

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

-1. cof (a21) 0 + 0 + 0

-1.	0	0	3	0	0
	-1	x	1	-1	x
	0	-1	-2	0	-1

$i + j$

$2 + 1$ ↓

3 (ímpar)

Então, −3

$0 + 0 + 3$

$-1.(-3) = (3)$

$(det = -2x^3 + x^2 + 3)$

alternativa A)

S T Q Q S S D

__/__/__

(4)

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

escolhido

$f(x) = \det A$ e $f(-2) = 8$

x . cof(11)

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

escolhido

$0 + xk + 0$

$$x \cdot \left(x \cdot \begin{vmatrix} x & 1 & 0 \\ 0 & x & k \\ 0 & 1 & x \end{vmatrix} \begin{matrix} x & 1 \\ 0 & x \\ 0 & 1 \end{matrix} \right) \rightarrow x^3 - xk$$

$x^3 + 0 + 0$

$x \cdot (x \cdot (x^3 - xk))$

$x^4 \cdot (x^3 - xk)$

$x^5 - x^3 k \rightarrow \det A$

$f(-2) = 8$ $f(x) = \det A$

$f(-2) = x^5 - x^3 k = 8$

$f(-2) = (-2)^5 - (-2)^3 k = 8$

$-32 + 8k = 8$

$8k = 8 + 32$

$8k = 40$

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

$k = 5$

alternativa D)