03 · 06 · 2021

Tarefa básica

1) $\begin{pmatrix} p & 2 & 2 \\ p & 4 & 4 \\ p & 4 & 1 \end{pmatrix} = -18 \rightarrow det$ $\qquad \begin{pmatrix} 9 & -1 & 2 \\ 9 & -2 & 4 \\ 9 & -2 & 1 \end{pmatrix} = ?$

↳ é a matriz dividida

$2 \div (-2) = -1 \quad 4 \div (-2) = -2 \quad 4 \div (-2) = -2$

$-18 \div (-2) = 9 \rightarrow det$ (Letra E)

2) $det(2A) = 2^4 \cdot -6 = 16 \cdot (-6) = -96$

$-96 = x - 97$

$x = 97 - 96 = 1$ (C)

3) $\det B = (1/x) \cdot Y \cdot \det A \rightarrow \det B = (x/y) \cdot \det A \rightarrow$
$\det B = \det A (x/y)$

letra C

4)

	2	1	0	2	1
	K	K	K	K	K
	1	2	-2	1	2

$\det = -4k + k + 0 - 0 - 4k + 2k = 10$

$-5k = 10, \; k = -10/5 = -2$

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

$\det = -4 - 3 + 0 - 0 + 12 + 4 = 16 - 7 = 9$ (C)

5) $L_3 - L_1 = L_2$

$3 - 1 = 2$
$-7 - (-11) = 4$
$2 - 5 = -3$

letra D

6) $\begin{vmatrix} 1 & x & x^2 \\ 1 & 2 & 4 \\ 1 & -3 & 9 \end{vmatrix} = 0$

$0 = 1.2.9 + x.4.1 + x^2.1.(-3) - x^2.2.1 - 1.4.(-3) - x.1.9$

$0 = 18 + 4x - 3x^2 - 2x^2 + 12 - 9x$

$0 = -5x^2 - 5x + 30$

$0 = x^2 - x + 6$

$\Delta = b^2 - 4ac$

$\Delta = (-1)^2 - 4.(-1).6$

$\Delta = 1 + 24$

$\Delta = 25 \rightarrow \sqrt{\Delta} = 5$

$x' = (-b + \sqrt{\Delta}) / 2a$

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

$x' = 6/-2$

$x' = -3$

$x'' = (-b + \sqrt{\Delta}) / 2a$

$x'' = (1-5)/2.(-1)$

$x'' = -4/-2$

$x'' = 2$

$V = \{x'; x''\}$

$V = \{-3; 2\}$

7)

1	0	0	0	0
2	2	0	0	0
3	2	1	0	0
4	2	3	2	0
5	1	2	3	3

$1 \cdot 2 \cdot 1 \cdot (-2) \cdot 3$

$2 \cdot (-2) \cdot 3$

$-4 \cdot 3$

-12