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Lista de exercícios

1. $\begin{pmatrix} p & 2 & 2 \\ p & 4 & 4 \\ p & 4 & 1 \end{pmatrix} = -18$

$\begin{vmatrix} p & 2 & 2 & p & 2 \\ p & 4 & 4 & p & 4 \\ p & 4 & 1 & p & 4 \end{vmatrix}$

$8p \quad 16p \quad 2p = 26p$

$4p \quad 8p \quad 8p = 20p$

$20p - 26p = -18$

$-6p = -18$

$p = -18/-6$

$p = 3$

$\begin{pmatrix} p & -1 & 2 \\ p & -2 & 4 \\ p & -2 & 1 \end{pmatrix}$

$-12 \quad -24 \quad -3 = -39$

$\begin{vmatrix} 3 & -1 & 2 & 3 & -1 \\ 3 & -2 & 4 & 3 & -2 \\ 3 & -2 & 1 & 3 & -2 \end{vmatrix}$

$-6 \quad -12 \quad -12 = -30$

$\det = -30 - (-39)$

$\det = -30 + 39$

$\det = 9$ //

alternativa (E) //

2. $\det(2A) = x^n \cdot \det A$

$= 2^4 \cdot -6$

$= 16 \cdot -6$

$= -96$

$\det(2A) = x_1 - 97$

$-96 = x_1 - 97$

$x_1 = 97 - 96$

$x_1 = 1$ //

alternativa (C) //

3.

4.

2	1	0	2	1	0 4k -2k
k	k	k	k	k	= 10
1	2	-2	1	2	

-4k k 0

$-4k + k + 0 - (0 + 4k - 2k) = 10$

$-3k - 4k + 2k = 10$

$-5k = 10$

$k = 10/-5$

$k = -2$

2	1	0	2	1	0 -12 -4
2	1	-3	2	1	
1	2	-2	1	2	

-4 -3 0

$-4 - 3 + 0 - (0 - 12 - 4)$

$-7 - (-16)$

$-7 + 16$

9

det = 9 //

alternativa (c) //

5.

1	-11	6	
-2	4	-3	
-3	-7	2	

$1 + (-2) = -3$ $-11 + 4 = -7$ $6 + (-3) = 2$

3° linha

alternativa (D) uma fila como combinação linear das outras duas filas paralelas //

$2x^2 \quad -12 \quad 9x$

6.

1	x	x^2	1	x	$(2x^2 - 12 + 9x) - (18 + 4x - 3x^2)$
1	2	4	1	2	$5x^2 + 5x - 30 = 0$
1	-3	9	1	-3	$x^2 + x - 6 = 0$

$18 \quad 4x \quad -3x^2$

$\Delta = 1^2 - 4.1.-6$

$\Delta = 1 + 24$

$\Delta = 25$

$x = \frac{-1 \pm \sqrt{25}}{2.1}$

$x = \frac{-1 \pm 5}{2}$

$x' = \frac{-1-5}{2} = \frac{-6}{2} = -3,$

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

$x_1 = \{-3, 2\}$ //

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

$det = a_{11} . a_{22} . a_{33} . a_{44} . a_{55}$

$det = 1 . 2 . 1 . -2 . 3$

$det = -12$ //

alternativa (D) //