

Semana 5

Tarefa Básica

1. $\begin{vmatrix} p & 2 & 2 & p & 2 \\ p & 4 & 4 & p & 4 \\ p & 4 & 4 & p & 4 \end{vmatrix}$ $4p + 8p + 8p = 20p$

$\begin{vmatrix} p & 4 & 4 & p & 4 \\ p & 4 & 4 & p & 4 \\ p & 4 & 4 & p & 4 \end{vmatrix}$ $(-12) + (-24) + (-3) = -39$

$\begin{vmatrix} p & -1 & 2 \\ p & -2 & 4 \\ p & -2 & 1 \end{vmatrix} = \begin{vmatrix} 3 & -1 & 2 \\ 3 & -2 & 4 \\ 3 & -2 & 1 \end{vmatrix}$ $-6 + (-12) + (-12) = -30$

$\det = -30 - (-39) = 9$

$20p - 26p = -18$
 $-6p = -18$
 $p = -18/6 = 3$

2. $\begin{vmatrix} a_{11} & a_{12} & a_{13} & a_{14} \\ a_{21} & a_{22} & a_{23} & a_{24} \\ a_{31} & a_{32} & a_{33} & a_{34} \\ a_{41} & a_{42} & a_{43} & a_{44} \end{vmatrix}$ $\det A = -6$ $\det B = K^n \cdot \det A$
 $\det(2A) = X \cdot 97$

$X \cdot 97 = 2^4 \cdot (-6)$
 $X \cdot 97 = 16 \cdot (-6)$
 $X \cdot 97 = -96$
 $X = 97 - 96$
 $X = 1$

3. $\det B = K \cdot \det A$ $\begin{bmatrix} a_{11} & a_{12} \end{bmatrix} \begin{pmatrix} x & a_{11} \\ x & x \end{pmatrix}$
 $\det B = (1/x) \cdot x \cdot \det A$ $\begin{pmatrix} x & a_{12} \\ x & x \end{pmatrix} \begin{pmatrix} x & \det A \\ x & x \end{pmatrix}$
 $\det B = (x/y) \cdot \det A$
 $\det B = \det A$


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4. $\begin{vmatrix} 2 & 1 & 0 \\ K & K & K \\ 1 & 2 & -2 \end{vmatrix} \begin{vmatrix} 2 & 1 \\ K & K \\ 1 & 2 \end{vmatrix}$ $0 + 4K + (-2K) = 2K$
 $\begin{vmatrix} 2 & 1 & 0 \\ 2+4 & -2+3 & -2-1 \\ 1 & 2 & -2 \end{vmatrix} = \begin{vmatrix} 2 & 1 & 0 \\ 2 & 1 & -3 \\ 1 & 2 & -2 \end{vmatrix}$ $-4K + K - (4K - 2K) = 10$
 $-4K + K + 0 = -3K$ $-4K + K - 2 = 10$
 $-10 = -5K$
 $K = 10/5 = 2$

5. $\begin{vmatrix} 1 & -11 & 6 \\ -2 & 4 & -3 \\ -3 & -7 & 2 \end{vmatrix}$ $6x - 11 = 4$ $-3 \cdot 2 = 6$ $2 \cdot 2 = 4$
 $x = 2$ $-6 + 4 = -2$ $4 - 7 = -3$
 $6 \cdot 2 = 12$
 $12 - 11 = 1$

6. $\begin{vmatrix} 1 & x & x \\ 1 & 2 & 4 \\ 1 & -3 & 2 \end{vmatrix} \begin{vmatrix} 1 & x \\ 1 & 2 \\ 1 & -3 \end{vmatrix}$ $2x^2 + (-12) + 9x$ $18 + 4x + (-3x)^2$
 $18 + 4x - 3x^2 - 2x^2 + 12 - 9x = 0$
 $-5x^2 - 5x + 30 = 0$
 $x^2 + x - 6 = 0$
 $x = \frac{-1 \pm \sqrt{25}}{2}$ $x_1 = \frac{-1+5}{2} = 2$
 $x_2 = \frac{-1-5}{2} = -3$
 $\Delta = 1^2 - 4 \cdot 1 \cdot -6$
 $\Delta = 1 + 24$
 $\Delta = 25$

Obs: no final é: $-1-5/2 = -6/2 = -3$



7.	1	0	0	0	0	
	2	2	0	0	0	$\det = 1 \cdot 2 \cdot 1 \cdot -2 \cdot 3 = -12$
	3	2	1	0	0	
	4	2	3	-2	0	
	5	1	2	3	3	