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(1) a) $\begin{vmatrix} 7 & -3 \\ 5 & -2 \end{vmatrix} = -14-(-15) = 1$

d) $\begin{vmatrix} 0 & 3 & 1 \\ -2 & 0 & 2 \\ 8 & 4 & 0 \end{vmatrix} = [0+18-8]-[0+0+0]$

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(2) a)

$\begin{vmatrix} 1+x & 1-x \\ 1-x & 1+x \end{vmatrix} = 12$

$(1+x)^2-(1-x)^2 = 12$

$1+2x+x^2-1+2x-x^2 = 12$

$4x = 12 \quad x = 3$

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(3) a)

$\begin{vmatrix} 3 & 4 & -5 \\ 1 & -1 & 1 \\ 1 & -1 & a \end{vmatrix} = 0$

MODO 1 Si $a=1$ $F_2 = F_3 \Rightarrow |A| = 0$

MODO 2

$[-3a+4+5]-[5-3+4a] = 0$

$-3a+9-2-4a = 0$

$-7a+7 = 0$

$a = 1$

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(5) $\begin{vmatrix} a & a \\ b & b \end{vmatrix} = 0$ $C_1 = C_2$ V

$\begin{vmatrix} 2 & 2 \\ 2 & 6 \end{vmatrix} = 4\begin{vmatrix} 1 & 1 \\ 1 & 3 \end{vmatrix}$ V

$|\alpha A| = \alpha^2 |A|$

$\begin{vmatrix} 2 & 2 \\ 2 & 6 \end{vmatrix} = 2\begin{vmatrix} 1 & 1 \\ 1 & 3 \end{vmatrix}$ NO

$\begin{vmatrix} a-1 & a \\ b+2 & b \end{vmatrix} = \begin{vmatrix} -1 & a \\ 2 & b \end{vmatrix}$

MODO 1 $\begin{vmatrix} a & b \\ b & b \end{vmatrix} + \begin{vmatrix} -1 & a \\ 2 & b \end{vmatrix}$ MODO 2 $C_1 = C_1 + C_2$

$\begin{vmatrix} 2a & a-b \\ 2b & b \end{vmatrix} = 2b \begin{vmatrix} a & a-b \\ 1 & 1 \end{vmatrix}$

$\begin{vmatrix} 2a & a-b \\ 2b & b \end{vmatrix} = 2\begin{vmatrix} a & a-b \\ b & b \end{vmatrix}$

$2b \begin{vmatrix} a & a-b \\ 1 & 1 \end{vmatrix}$ Verdadera

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$\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ x & y & z \end{vmatrix} = 5$

a) $\begin{vmatrix} 1 & 1 & 1 \\ a+1 & b+1 & c+1 \\ x/2 & y/2 & z/2 \end{vmatrix} =$

$F_2 = F_2 - F_1$

$\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ x/2 & y/2 & z/2 \end{vmatrix} = \frac{1}{2}\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ x & y & z \end{vmatrix} = \frac{1}{2}\cdot 5 = \frac{5}{2}$

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$\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ x & y & z \end{vmatrix} = 5$

b) $\begin{vmatrix} a & b & c \\ x & y & z \\ 1 & 1 & 1 \end{vmatrix} = -\begin{vmatrix} 1 & 1 & 1 \\ x & y & z \\ a & b & c \end{vmatrix} =$

$F_1 \leftrightarrow F_3$ $F_2 \leftrightarrow F_3$

$+\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ x & y & z \end{vmatrix} = 5$

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$\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ x & y & z \end{vmatrix}$

c) $\begin{vmatrix} 0 & 0 & 1 \\ c-a & b-c & c \\ z-x & y-z & z \end{vmatrix} = \begin{vmatrix} 1 & 1 \\ 2c-a & b & c \\ 2z-x & y & z \end{vmatrix}$

$C_1 = C_1 + C_3$ $C_1 = C_1 - 2C_3$

$C_2 = C_2 + C_3$

$\begin{vmatrix} -1 & 1 & 1 \\ -a & b & c \\ -x & y & z \end{vmatrix} = -\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ x & y & z \end{vmatrix} = -5$

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9 d)

$\begin{vmatrix} 1 & 0 & 2 & 0 \\ 0 & 3 & 0 & 0 \\ 4 & 0 & 0 & 5 \\ 0 & 6 & 0 & 1 \end{vmatrix} = 2\begin{vmatrix} 0 & 3 & 0 \\ 4 & 0 & 5 \\ 0 & 6 & 1 \end{vmatrix}$

$2\left[(0+0+0) - (0+0+12)\right]$

$2(-12) = -24$

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$$\begin{vmatrix} 2 & 1 & -3 & 1 \\ 3 & 1 & 1 & 0 \\ 4 & 0 & 3 & 1 \\ 5 & 2 & -2 & 1 \end{vmatrix} = \quad C_1 \leftrightarrow C_4$$

$$-\begin{vmatrix} 1 & 1 & -3 & 2 \\ 0 & 1 & 1 & 3 \\ 1 & 0 & 3 & 4 \\ 1 & 2 & -2 & 5 \end{vmatrix} = -\begin{vmatrix} 1 & 1 & -3 & 2 \\ 0 & 1 & 1 & 3 \\ 0 & -1 & 6 & 2 \\ 0 & 1 & 1 & 3 \end{vmatrix}$$

$F_3 = F_3 - F_1$

$F_4 = F_4 - F_1$

$$-1\begin{vmatrix} 1 & 1 & 3 \\ -1 & 6 & 2 \\ 1 & 1 & 3 \end{vmatrix} =$$

$$-[(18+2-3)-(18+2-3)]$$

$$-[0] = 0$$

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$$\begin{vmatrix} 2 & 1 & 3 & 0 \\ -1 & 2 & 3 & -1 \\ 0 & 0 & 1 & 2 \\ -1 & 2 & 4 & 5 \end{vmatrix}$$

$$\begin{vmatrix} 2 & 3 & -4 & 3 \\ 4 & -5 & 2 & -4 \\ 3 & 4 & -3 & 5 \\ 2 & -3 & 5 & 7 \end{vmatrix}$$

Acaban 8 ; (6) (14)

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