① Determina la adjunta y la inversa

① $\begin{bmatrix} 3 & 0 \\ 0 & 1 \end{bmatrix}$ $\quad A^{-1} = \frac{C^T}{|A|}$

$\begin{bmatrix} 3 & 0 \\ 0 & 1 \end{bmatrix} \rightarrow \begin{vmatrix} 3 & 0 \\ 0 & 1 \end{vmatrix}$ $\quad |A| = 3 - 0 = 3$ $\quad |A| = 3$

$\begin{bmatrix} 3 & 0 \\ 0 & 1 \end{bmatrix}$ $\quad C = \begin{bmatrix} 1 & 0 \\ 0 & 3 \end{bmatrix}$ $\quad \begin{bmatrix} + & - \\ - & + \end{bmatrix}$

$C_{1,1} = 1 \quad C_{1,2} = 0 \quad C_{2,1} = 0 \quad C_{2,2} = 3$

$C^T = \begin{bmatrix} 1 & 0 \\ 0 & 3 \end{bmatrix}$

$A^{-1} = \frac{1}{3} \begin{bmatrix} 1 & 0 \\ 0 & 3 \end{bmatrix}$

①

$$A^{-1} = \begin{bmatrix} \frac{1}{3} & 0 \\ 0 & 1 \end{bmatrix} \qquad C^T = \begin{bmatrix} 1 & 0 \\ 0 & 3 \end{bmatrix}$$

(2) $\begin{bmatrix} 1 & 2 \\ 0 & 1 \end{bmatrix}$ $\quad A^{-1} = \frac{C^T}{|A|}$

$\begin{vmatrix} 1 & 2 \\ 0 & 1 \end{vmatrix} = |A| = 1 - 0 \quad |A| = 1$

$\begin{bmatrix} 1 & 2 \\ 0 & 1 \end{bmatrix} \quad \begin{bmatrix} 1 & 0 \\ -2 & 1 \end{bmatrix} \quad \begin{bmatrix} + & - \\ - & + \end{bmatrix}$

$C_{1,1} = 1 \quad C_{1,2} = 0 \quad C_{2,1} = -2 \quad C_{2,2} = 1$

$C^T = \begin{bmatrix} 1 & -2 \\ 0 & 1 \end{bmatrix}$

(2)

$$A^{-1} = \begin{bmatrix} 1 & -2 \\ 0 & 1 \end{bmatrix} \quad C^T = \begin{bmatrix} 1 & -2 \\ 0 & 1 \end{bmatrix}$$

(3) $\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$ $\qquad A^{-1} = \dfrac{C^T}{|A|}$

$\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$ $\quad |A| = 0 - 1 = -1 \qquad |A| = -1$

$\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$ $\begin{bmatrix} 0 & -1 \\ -1 & 0 \end{bmatrix}$ $\begin{bmatrix} + & - \\ - & + \end{bmatrix}$

$C_{1,1} = 0 \quad C_{1,2} = -1 \quad C_{2,1} = -1 \quad C_{2,2} =$

$$C_T = \begin{bmatrix} 0 & -1 \\ -1 & 0 \end{bmatrix}$$

$$A^{-1} = -1 \begin{bmatrix} 0 & -1 \\ -1 & 0 \end{bmatrix} = \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$$

$$A^{-1} = \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix} \qquad C^T = \begin{bmatrix} 0 & -1 \\ -1 & 0 \end{bmatrix}$$

(4) $\begin{bmatrix} 1 & 0 \\ -\frac{1}{2} & 1 \end{bmatrix}$ $\quad A^{-1} = \frac{C^T}{|A|}$

$\begin{vmatrix} 1 & 0 \\ -\frac{1}{2} & 1 \end{vmatrix} = 1 - 0 \qquad |A| = 1$

$\begin{bmatrix} 1 & 0 \\ -\frac{1}{2} & 1 \end{bmatrix} \quad \begin{bmatrix} 1 & \frac{1}{2} \\ 0 & 1 \end{bmatrix} \quad \begin{bmatrix} + & - \\ - & + \end{bmatrix}$

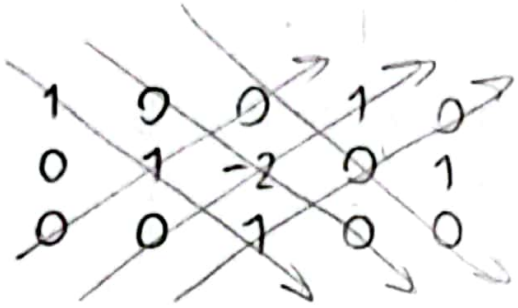
$C_{1,1} = 1 \quad C_{1,2} = \frac{1}{2} \quad C_{2,1} = 0 \quad C_{2,2} = 1$

$C_T = \begin{bmatrix} 1 & 0 \\ \frac{1}{2} & 1 \end{bmatrix}$

$$A^{-1} = \begin{bmatrix} 1 & 0 \\ \frac{1}{2} & 1 \end{bmatrix} \qquad C_T = \begin{bmatrix} 1 & 0 \\ \frac{1}{2} & 1 \end{bmatrix}$$

(5) $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & -2 \\ 0 & 0 & 1 \end{bmatrix}$ $A^{-1} = \frac{C^T}{|A|}$

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



$|A| = 1 - (0)$ $|A| = 1$

$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & -2 \\ 0 & 0 & 1 \end{bmatrix}$ $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 2 & 1 \end{bmatrix}$ $\begin{bmatrix} + & - & + \\ - & + & - \\ + & - & + \end{bmatrix}$

$C_{f_{1,1}} = 1$ $C_{f_{1,2}} = 0$ $C_{f_{1,3}} = 0$ $C_{2,1} = 0$ $C_{2,2} = 1$

$C_{2,3} = 0$ $C_{f_{3,1}} = 0$ $C_{3,2} = +2$ $C_{3,3} =$

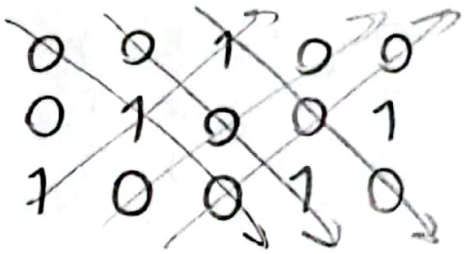
$C^T = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 2 \\ 0 & 0 & 1 \end{bmatrix}$

(5)

$A^{-1} = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 2 \\ 0 & 0 & 1 \end{bmatrix}$ $C^T = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 2 \\ 0 & 0 & 1 \end{bmatrix}$

(6) $\begin{bmatrix} 0 & 0 & 1 \\ 0 & 1 & 0 \\ 1 & 0 & 0 \end{bmatrix}$ $A^{-1} = \frac{C^T}{|A|}$

$\begin{bmatrix} 0 & 0 & 1 \\ 0 & 1 & 0 \\ 1 & 0 & 0 \end{bmatrix}$



$|A| = -1$

$\begin{bmatrix} 0 & 0 & 1 \\ 0 & 1 & 0 \\ 1 & 0 & 0 \end{bmatrix}$ $\begin{bmatrix} 1 & 0 & -1 \\ 0 & -1 & 0 \\ -1 & 0 & 0 \end{bmatrix}$ $\begin{bmatrix} + & - & + \\ - & + & - \\ + & - & + \end{bmatrix}$

$C_{f_{1,1}} = 0$ $C_{f_{1,2}} = 0$ $C_{f_{1,3}} = -1$ $C_{2,1} = 0$ $C_{2,2} = -1$

$C_{f_{2,3}} = 0$ $C_{f_{3,1}} = -1$ $C_{f_{3,2}} = 0$ $C_{f_{3,3}} =$

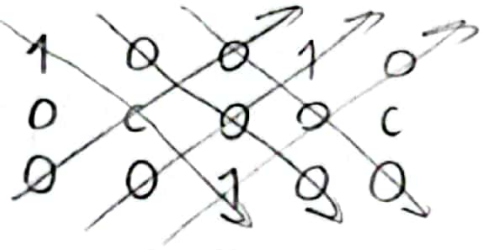
$C^T = \begin{bmatrix} 0 & 0 & -1 \\ 0 & -1 & 0 \\ -1 & 0 & 0 \end{bmatrix}$

(6)

$A^{-1} = \begin{bmatrix} 0 & 0 & 1 \\ 0 & 1 & 0 \\ 1 & 0 & 0 \end{bmatrix}$ $C^T = \begin{bmatrix} 0 & 0 & -1 \\ 0 & -1 & 0 \\ -1 & 0 & 0 \end{bmatrix}$

(7) $\begin{bmatrix} 1 & 0 & 0 \\ 0 & c & 0 \\ 0 & 0 & 1 \end{bmatrix}$ $\quad A^{-1} = \dfrac{C^T}{|A|}$

$\begin{vmatrix} 1 & 0 & 0 \\ 0 & c & 0 \\ 0 & 0 & 1 \end{vmatrix}$



$|A| = c$

$\begin{bmatrix} 1 & 0 & 0 \\ 0 & c & 0 \\ 0 & 0 & 1 \end{bmatrix}$ $\begin{bmatrix} c & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & c \end{bmatrix}$ $\begin{bmatrix} + & - & + \\ - & + & - \\ + & - & + \end{bmatrix}$

$C_{1,1} = c \quad C_{1,2} = 0 \quad C_{1,3} = 0 \quad C_{2,1} = 0 \quad C_{2,2} = 1$

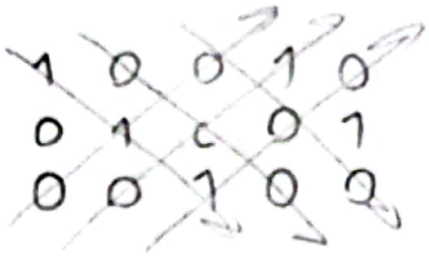
$C_{2,3} = 0 \quad C_{3,1} = 0 \quad C_{3,2} = 0 \quad C_{3,3} = c$

$C^T = \begin{bmatrix} c & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & c \end{bmatrix}$

(7)

$A^{-1} = \begin{bmatrix} 1 & 0 & 0 \\ 0 & \frac{1}{c} & 0 \\ 0 & 0 & 1 \end{bmatrix}$ $\quad C^T = \begin{bmatrix} c & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & c \end{bmatrix}$

(8) $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & c \\ 0 & 0 & 1 \end{bmatrix}$ $\quad A^{-1} = \dfrac{C^T}{|A|}$

$\begin{vmatrix} 1 & 0 & 0 \\ 0 & 1 & c \\ 0 & 0 & 1 \end{vmatrix}$  $\quad |A| = 1$

$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & c \\ 0 & 0 & 1 \end{bmatrix}$ $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & -c & 1 \end{bmatrix}$ $\begin{bmatrix} + & - & + \\ - & + & - \\ + & - & + \end{bmatrix}$

$C_{1,1} = 1 \quad C_{1,2} = 0 \quad C_{1,3} = 0 \quad C_{2,1} = 0 \quad C_{2,2} = 1$

$C_{2,3} = 0 \quad C_{3,1} = 0 \quad C_{3,2} = -C$

$C^T = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & -c \\ 0 & 0 & 1 \end{bmatrix}$

$$A^{-1} = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & -c \\ 0 & 0 & 1 \end{bmatrix} \qquad C^T = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & -c \\ 0 & 0 & 1 \end{bmatrix}$$

(9) $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ $\quad A^{-1} = \frac{C^T}{|A|}$

$\begin{vmatrix} 1 & 2 \\ 3 & 4 \end{vmatrix} = 4 - 6 = -2 \qquad |A| = -2$

$\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} \quad \begin{bmatrix} 4 & -3 \\ -2 & 1 \end{bmatrix} \quad \begin{bmatrix} + & - \\ - & + \end{bmatrix}$

$C_{1,1} = 4 \quad C_{1,2} = -3 \quad C_{2,1} = -2 \quad C_{2,2} = 1$

$C^T = \begin{bmatrix} 4 & -2 \\ -3 & 1 \end{bmatrix}$

$A^{-1} = \begin{bmatrix} \frac{4}{-2} & \frac{-2}{-2} \\ \frac{-3}{-2} & \frac{1}{-2} \end{bmatrix} = \begin{bmatrix} -2 & 1 \\ \frac{3}{2} & -\frac{1}{2} \end{bmatrix}$

(9)

$A^{-1} = \begin{bmatrix} -2 & 1 \\ \frac{3}{2} & -\frac{1}{2} \end{bmatrix} \qquad C^T = \begin{bmatrix} 4 & -2 \\ -3 & 1 \end{bmatrix}$

(10) $\begin{bmatrix} -2 & 4 \\ 3 & -1 \end{bmatrix}$ $A^{-1} = \frac{C_T}{|A|}$

$\begin{vmatrix} -2 & 4 \\ 3 & -1 \end{vmatrix}$ $|A| = 2 - 12$ $|A| = -10$

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

$C_{1,1} = -1$ $C_{1,2} = -3$ $C_{2,1} = -4$ $C_{2,2} = -2$

$C_T = \begin{bmatrix} -1 & -4 \\ -3 & -2 \end{bmatrix}$

$A^{-1} = \begin{bmatrix} \frac{-1}{-10} & \frac{-4}{-10} \\ \frac{-3}{-10} & \frac{-2}{-10} \end{bmatrix} = \begin{bmatrix} \frac{1}{10} & \frac{2}{5} \\ \frac{3}{10} & \frac{1}{5} \end{bmatrix}$

$A^{-1} = \begin{bmatrix} \frac{1}{10} & \frac{2}{5} \\ \frac{3}{10} & \frac{1}{5} \end{bmatrix}$ $C^T = \begin{bmatrix} -1 & -4 \\ -3 & -2 \end{bmatrix}$

(11) $\begin{bmatrix} 3 & -4 \\ -6 & 8 \end{bmatrix}$ $A^{-1} = \frac{C^T}{|A|}$

$\begin{vmatrix} 3 & -4 \\ -6 & 8 \end{vmatrix}$ $|A| = 24 - 24 = 0$ ∴ la inversa no existe

$\begin{bmatrix} 3 & -4 \\ -6 & 8 \end{bmatrix}$ $\begin{bmatrix} 8 & 6 \\ 4 & 3 \end{bmatrix}$ $\begin{bmatrix} + & - \\ - & + \end{bmatrix}$

$C_{1,1} = 8$ $C_{1,2} = 6$ $C_{2,1} = 4$ $C_{2,2} = 3$

$C_T = \begin{bmatrix} 8 & 4 \\ 6 & 3 \end{bmatrix}$ $A^{-1} =$ No existe

(12) $\begin{bmatrix} 1 & a \\ -a & 1 \end{bmatrix}$ $A^{-1} = \frac{C^T}{|A|}$

$\begin{vmatrix} 1 & a \\ -a & 1 \end{vmatrix}$ $|A| = 1 - (-a^2)$ $|A| = 1 + a^2$

$\begin{bmatrix} 1 & a \\ -a & 1 \end{bmatrix}$ $\begin{bmatrix} 1 & a \\ -a & 1 \end{bmatrix}$ $\begin{bmatrix} + & - \\ - & + \end{bmatrix}$

$C_{1,1} = 1$ $C_{1,2} = a$ $C_{2,1} = -a$ $C_{2,2} = 1$

$C_T = \begin{bmatrix} 1 & -a \\ a & 1 \end{bmatrix}$

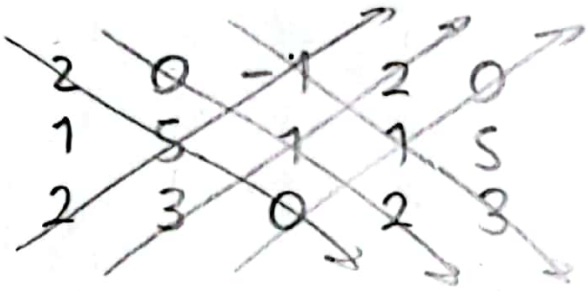
$A^{-1} = \begin{bmatrix} \frac{1}{1+a^2} & \frac{-a}{1+a^2} \\ \frac{a}{1+a^2} & \frac{1}{1+a^2} \end{bmatrix}$

(12)

$A^{-1} = \begin{bmatrix} \frac{1}{1+a^2} & \frac{-a}{1+a^2} \\ \frac{a}{1+a^2} & \frac{1}{1+a^2} \end{bmatrix}$ $C_T = \begin{bmatrix} 1 & -a \\ a & 1 \end{bmatrix}$

(13) $\begin{bmatrix} 2 & 0 & -1 \\ 1 & 5 & 1 \\ 2 & 3 & 0 \end{bmatrix}$ $A^{-1} = \frac{C^T}{|A|}$

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



$|A| = -3 - (-10 + 6)$ $|A| = -3 - (-4)$

$|A| = -3 + 4$ $|A| = 1$

$\begin{bmatrix} 2 & 0 & -1 \\ 1 & 5 & 1 \\ 2 & 3 & 0 \end{bmatrix}$ $\begin{bmatrix} -3 & 2 & -7 \\ -3 & 2 & -6 \\ 5 & -3 & 10 \end{bmatrix}$ $\begin{bmatrix} + & - & + \\ - & + & - \\ + & - & + \end{bmatrix}$

$C_{1,1} = -3$ $C_{1,2} = 2$ $C_{1,3} = 3 - 10 = -7$

$C_{2,1} = -3$ $C_{2,2} = 2$ $C_{2,3} = -6$ $C_{3,1} = 5$ $C_{3,2} = -3$

$C_{3,3} = 10$

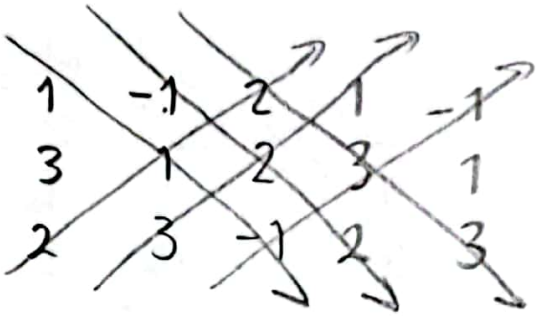
$C_T = \begin{bmatrix} -3 & -3 & 5 \\ 2 & 2 & -3 \\ -7 & -6 & 10 \end{bmatrix}$

(13)

$A^{-1} = \begin{bmatrix} -3 & -3 & 5 \\ 2 & 2 & -3 \\ -7 & -6 & 10 \end{bmatrix}$ $C^T = \begin{bmatrix} -3 & -3 & 5 \\ 2 & 2 & -3 \\ -7 & -6 & 10 \end{bmatrix}$

(14) $\begin{bmatrix} 1 & -1 & 2 \\ 3 & 1 & 2 \\ 2 & 3 & -1 \end{bmatrix}$ $A^{-1} = \frac{C^T}{|A|}$

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



$|A| = -1 - 4 + 18 - (4 + 6 + 3)$

$|A| = 13 - 13 \qquad |A| = 0$ La inversa no existe

$\begin{bmatrix} 1 & -1 & 2 \\ 3 & 1 & 2 \\ 2 & 3 & -1 \end{bmatrix}$ $\begin{bmatrix} -7 & 7 & 7 \\ 5 & -5 & -5 \\ -4 & 4 & 4 \end{bmatrix}$ $\begin{bmatrix} + & - & + \\ - & + & - \\ + & - & + \end{bmatrix}$

$C_{f1,1} = -1 - 6 = -7 \quad C_{f1,2} = (-3 - 4) = +7 \quad C_{1,3} = 9 - 2 = 7$

$C_{f2,2} = 1 - 6 = -(-5) \quad C_{f2,1} = -1 - 4 = -5 \quad C_{f1,3} = 3 + 2 = -5$

$C_{f3,1} = -2 - 2 = -4 \quad C_{f3,2} = 2 - 6 = +4 \quad C_{f3,3} = 1 + 3 = 4$

$C_T = \begin{bmatrix} -7 & 5 & -4 \\ 7 & -5 & 4 \\ 7 & -5 & 4 \end{bmatrix}$

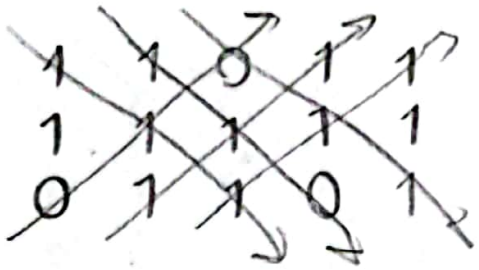
(14)

A^{-1} = No existe $\qquad C^T = \begin{bmatrix} -7 & 5 & -4 \\ 7 & -5 & 4 \\ 7 & -5 & 4 \end{bmatrix}$

(1S)

$$\begin{bmatrix} 1 & 1 & 0 \\ 1 & 1 & 1 \\ 0 & 1 & 1 \end{bmatrix} \qquad A^{-1} = \frac{C^T}{|A|}$$

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



$|A| = 1 - (1+1) \qquad |A| = 1 - 2 \qquad |A| = -1$

$$\begin{bmatrix} 1 & 1 & 0 \\ 1 & 1 & 1 \\ 0 & 1 & 1 \end{bmatrix} \quad \begin{bmatrix} 0 & -1 & 1 \\ -1 & 1 & -1 \\ 1 & -1 & 0 \end{bmatrix} \quad \begin{bmatrix} + & - & + \\ - & + & - \\ + & - & + \end{bmatrix}$$

$C_{1,1} = 0 \quad C_{1,2} = 1 \quad C_{1,3} = 1 \quad C_{2,1} = -1 \quad C_{2,2} = 1$

$C_{2,3} = -1 \quad C_{3,1} = 1 \quad C_{3,2} = 1 \quad C_{3,3} = 0$

$$C^T = \begin{bmatrix} 0 & -1 & 1 \\ -1 & 1 & -1 \\ 1 & -1 & 0 \end{bmatrix}$$

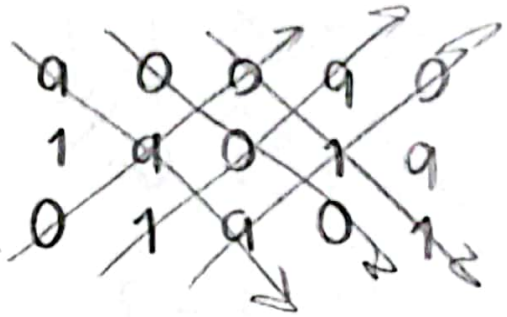
$$A^{-1} = \begin{bmatrix} \frac{0}{-1} & \frac{-1}{-1} & \frac{1}{-1} \\ \frac{-1}{-1} & \frac{1}{-1} & \frac{-1}{-1} \\ \frac{1}{-1} & \frac{-1}{-1} & \frac{0}{-1} \end{bmatrix}$$

(1S)

$$A^{-1} = \begin{bmatrix} 0 & 1 & -1 \\ 1 & -1 & 1 \\ -1 & 1 & 0 \end{bmatrix} \qquad C^T = \begin{bmatrix} 0 & -1 & 1 \\ -1 & 1 & -1 \\ 1 & -1 & 0 \end{bmatrix}$$

(16) $\begin{bmatrix} a & 0 & 0 \\ 1 & a & 0 \\ 0 & 1 & a \end{bmatrix}$

$\begin{vmatrix} a & 0 & 0 \\ 1 & a & 0 \\ 0 & 1 & a \end{vmatrix}$



$|A| = a^3$

$\begin{bmatrix} a & 0 & 0 \\ 1 & a & 0 \\ 0 & 1 & a \end{bmatrix}$ $\begin{bmatrix} a^2 & -a & 1 \\ 0 & a^2 & -a \\ 0 & 0 & a^2 \end{bmatrix}$ $\begin{bmatrix} + & - & + \\ - & + & - \\ + & - & + \end{bmatrix}$

$C_{f_{1,1}} = a^2 \quad C_{1,2} = -a \quad C_{1,3} = 1 \quad C_{2,1} = 0 \quad C_{2,2} = a^2$

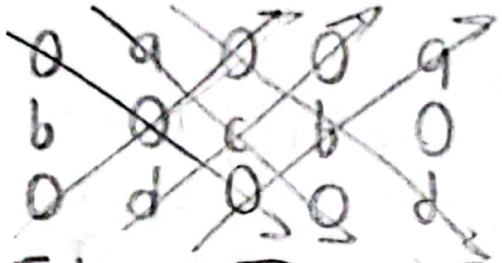
$C_{2,3} = a \quad C_{3,1} = 0 \quad C_{3,2} = 0 \quad C_{3,3} = a^2$

$C^T = \begin{bmatrix} a^2 & 0 & 0 \\ -a & a^2 & 0 \\ 1 & -a & a^2 \end{bmatrix}$ $A^{-1} = \begin{bmatrix} \frac{a^2}{a^3} & 0 & 0 \\ \frac{-a}{a^3} & \frac{a^2}{a^3} & 0 \\ \frac{1}{a^3} & \frac{-a}{a^3} & \frac{a^2}{a^3} \end{bmatrix}$

$A^{-1} = \begin{bmatrix} \frac{1}{a} & 0 & 0 \\ \frac{-1}{a^2} & \frac{1}{a} & 0 \\ \frac{1}{a^3} & \frac{-1}{a^2} & \frac{1}{a} \end{bmatrix}$ $C^T = \begin{bmatrix} a^2 & 0 & 0 \\ -a & a^2 & 0 \\ 1 & -a & a^2 \end{bmatrix}$ (16)

(17) $\begin{bmatrix} 0 & a & 0 \\ b & 0 & c \\ 0 & d & 0 \end{bmatrix}$ $\quad A^{-1} = \frac{C^T}{|A|}$

$\begin{vmatrix} 0 & a & 0 \\ b & 0 & c \\ 0 & d & 0 \end{vmatrix}$



$|A| = 0$

No existe la inversa

$\begin{bmatrix} 0 & a & 0 \\ b & 0 & c \\ 0 & d & 0 \end{bmatrix}$ $\begin{bmatrix} -cd & 0 & bd \\ 0 & 0 & 0 \\ ac & 0 & -ab \end{bmatrix}$ $\begin{bmatrix} + & - & + \\ - & + & - \\ + & - & + \end{bmatrix}$

$C_{1,1} = -cd \quad C_{1,2} = 0 \quad C_{1,3} = bd \quad C_{2,1} = 0 \quad C_{2,2} = 0$

$C_{2,3} = 0 \quad C_{3,1} = ac \quad C_{3,2} = 0 \quad C_{3,3} = -ab$

$$C^T = \begin{bmatrix} -cd & 0 & ac \\ 0 & 0 & 0 \\ bd & 0 & -ab \end{bmatrix}$$

(17)

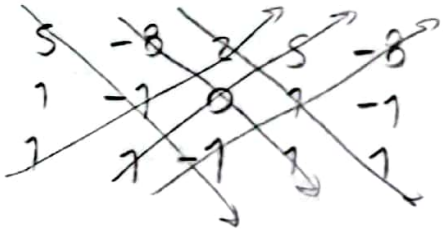
$A^{-1} =$ No existe $\quad C^T = \begin{bmatrix} -cd & 0 & ac \\ 0 & 0 & 0 \\ bd & 0 & -ab \end{bmatrix}$

(18) $\begin{bmatrix} 0 & -1 & 1 & 0 \\ 2 & 1 & 0 & 2 \\ 1 & -1 & 3 & 0 \\ 0 & 1 & 1 & -1 \end{bmatrix}$ $e_1 +$

$$A^{-1} = \frac{C^T}{|A|}$$

$$\begin{vmatrix} 0 & -1 & 1 & 0 \\ 2 & 1 & 0 & 2 \\ 1 & -1 & 3 & 0 \\ 0 & 1 & 1 & -1 \end{vmatrix} \xrightarrow{e_1 + e_3 \Rightarrow e_1} \begin{vmatrix} 1 & -2 & 4 & 0 \\ 2 & 1 & 0 & 2 \\ 1 & -1 & 3 & 0 \\ 0 & 1 & 1 & -1 \end{vmatrix} \xrightarrow[e_3 - e_1 \to e_3]{e_2 - 2e_1 \to e_2}$$

$$\begin{vmatrix} 1 & -2 & 4 & 0 \\ 0 & 5 & -8 & 2 \\ 0 & 1 & -1 & 0 \\ 0 & 1 & 1 & -1 \end{vmatrix} \quad \begin{vmatrix} 5 & -8 & 2 \\ 1 & -1 & 0 \\ 1 & 1 & -1 \end{vmatrix}$$

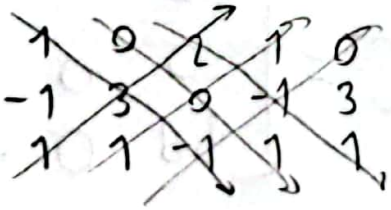


$|A| = 1(5 + 2 - (-2 + 8))$

$|A| = 7 - 6 \qquad |A| = 1$

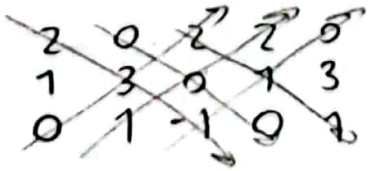
$$\begin{bmatrix} 0 & -1 & 1 & 0 \\ 2 & 1 & 0 & 2 \\ 1 & -1 & 3 & 0 \\ 0 & 1 & 1 & -1 \end{bmatrix} \quad \begin{bmatrix} -11 & +4 & 5 & 9 \\ -2 & 1 & 1 & 2 \\ 5 & -2 & -2 & -4 \\ -4 & 2 & 2 & 3 \end{bmatrix} \quad \begin{bmatrix} + & - & + & - \\ - & + & - & + \\ + & - & + & - \\ - & + & - & + \end{bmatrix}$$

$C_{1,1} = \begin{bmatrix} 1 & 0 & 2 \\ -1 & 3 & 0 \\ 1 & 1 & -1 \end{bmatrix}$



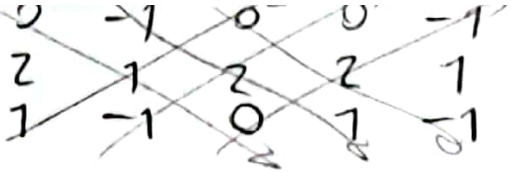
$C_{1,1} = -3 - 2 - (6) = -3 - 2 - 6 = -11$

$C_{1,2} = \begin{bmatrix} 2 & 0 & 2 \\ 1 & 3 & 0 \\ 0 & 1 & -1 \end{bmatrix}$



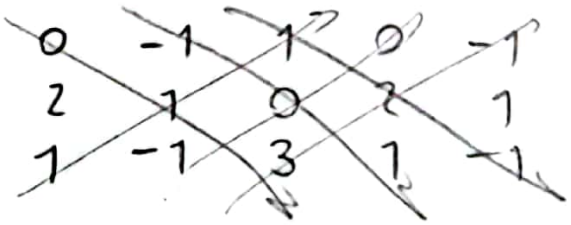
$C_{1,2} = -6 + 2 - (0) = -6 + 2 = -4$

$$C_{4,3} = \begin{bmatrix} 0 & -1 & 0 \\ 2 & 1 & 2 \\ 1 & -1 & 0 \end{bmatrix}$$



$$C_{4,3} = -2$$

$$C_{4,4} = \begin{bmatrix} 0 & -1 & 1 \\ 2 & 1 & 0 \\ 1 & -1 & 3 \end{bmatrix}$$



$$C_{4,4} = -2 - (1 - 6) = -2 - (-5) = -2 + 5 = 3$$

$$C^T = \begin{bmatrix} -11 & -2 & 5 & -4 \\ 4 & 1 & -2 & 2 \\ 5 & 1 & -2 & 2 \\ 9 & 2 & -4 & 3 \end{bmatrix}$$

(18)

$$A^{-1} = \begin{bmatrix} -11 & -2 & 5 & -4 \\ 4 & 1 & -2 & 2 \\ 5 & 1 & -2 & 2 \\ 9 & 2 & -4 & 3 \end{bmatrix} \qquad C^T = \begin{bmatrix} -11 & -2 & 5 & -4 \\ 4 & 1 & -2 & 2 \\ 5 & 1 & -2 & 2 \\ 9 & 2 & -4 & 3 \end{bmatrix}$$