

Discutir:

EBAU PAU CANARIAS SEPT 2012

$$\begin{cases} 2x + y - z = -1 \\ x - 2y + 2z = m \\ 3x - y + mz = 4 \end{cases} \Rightarrow \left(\begin{array}{ccc|c} 2 & 1 & -1 & -1 \\ 1 & -2 & 2 & m \\ 3 & -1 & m & 4 \end{array} \right)$$

A A^*

¿Rango A?:

$$|A| = \begin{vmatrix} 2 & 1 & -1 \\ 1 & -2 & 2 \\ 3 & -1 & m \end{vmatrix} = -4m + 6 + 1 - 6 - m + 4 = -5m + 5$$

$$-5m + 5 = 0 \Rightarrow m = 1$$

Si $m \neq 1$ $R(A) = R(A^*) = 3 = n^{\circ}$ Incógnitas

SISTEMA COMPATIBLE DETERMINADO por el Teorema de Rouché.

Si $m = 1 \Rightarrow R(A) \neq 3; R(A) < 3$, recomof

$$\left(\begin{array}{ccc|c} 2 & 1 & -1 & -1 \\ 1 & -2 & 2 & 1 \\ 3 & -1 & 1 & 4 \end{array} \right) \Rightarrow \left| \begin{array}{cc} 2 & 1 \\ 1 & -2 \end{array} \right| \neq 0 \Rightarrow R(A) = 2$$

A A^*

¿Rango A^* ?

$$|A^*| = \begin{vmatrix} 2 & 1 & -1 \\ 1 & -2 & 1 \\ 3 & -1 & 4 \end{vmatrix} = -16 + 3 + 1 - 6 - 4 + 2 = -20 \neq 0$$

$R(A^*) = 3$ si $m = 1$

Si $m = 1; R(A) = 2; R(A^*) = 3 \Rightarrow$ S. INCOMPATIBLE