

$$A = \begin{bmatrix} 1 & h & -3 \\ -2 & 4 & 6 \end{bmatrix}$$

Conjecture of Grog:

$$h = -2, \text{ ~~is~~ inconsistent \rightarrow +$$

no number of
solns.

$$\begin{array}{l} \textcircled{1} \begin{bmatrix} 1 & -2 & -3 \\ -2 & 4 & 6 \end{bmatrix} \\ \textcircled{2} \end{array}$$

$$\textcircled{2} = -2 \textcircled{1}$$

$$A \sim \begin{bmatrix} 1 & h & -3 \\ 0 & 2h+4 & 0 \end{bmatrix} \quad \text{Consistent for all values of } h$$

$$(2h+4)x_2 = 0 \quad \text{and} \quad x_1 + h \cdot x_2 = -3$$

(Solve simultaneously)

#26 Construct 3 different aug. matrices whose soln. is $x_1 = -2$, $x_2 = 1$, $x_3 = 0$

$$\begin{bmatrix} 1 & 0 & 0 & -2 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{3 \times 4} \sim \begin{bmatrix} 0 & 1 & 0 & 1 \\ 1 & 0 & 0 & -2 \\ 0 & 0 & 1 & 0 \end{bmatrix}$$

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

#32

$$\begin{array}{l} \textcircled{1} \\ \textcircled{2} \\ \textcircled{3} \end{array} \begin{bmatrix} 1 & 2 & -5 & 0 \\ 0 & 1 & -3 & -2 \\ 0 & -3 & 9 & 5 \end{bmatrix} \sim \begin{array}{l} \textcircled{2} \\ \textcircled{1} \\ \textcircled{3} \end{array} \begin{bmatrix} 1 & 2 & -5 & 0 \\ 0 & 1 & -3 & -2 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$



$$\left(\begin{array}{l} 2y \\ \textcircled{3} \leftarrow 3 \cdot \textcircled{2} + \textcircled{3} \end{array} \right)$$

$$\textcircled{2} \leftarrow -3 \cdot \textcircled{1} + \textcircled{2}$$

