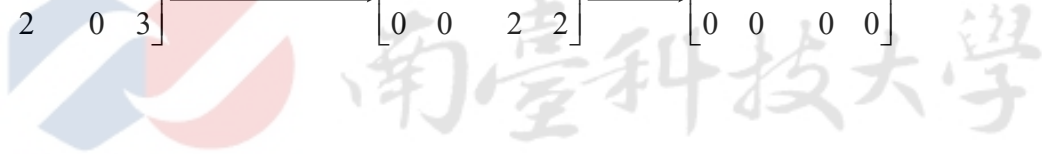


Find the rank of the matrix $\mathbf{A} = \begin{bmatrix} 1 & 2 & -2 & 1 \\ 3 & 6 & -5 & 4 \\ 1 & 2 & 0 & 3 \end{bmatrix}$. [101 淡江電機 2]

$$\begin{array}{l} \text{[解]} \end{array} \begin{bmatrix} 1 & 2 & -2 & 1 \\ 3 & 6 & -5 & 4 \\ 1 & 2 & 0 & 3 \end{bmatrix} \xrightarrow{R_{12}(-3); R_{13}(-1)} \begin{bmatrix} 1 & 2 & -2 & 1 \\ 0 & 0 & 1 & 1 \\ 0 & 0 & 2 & 2 \end{bmatrix} \xrightarrow{R_{23}(-2)} \begin{bmatrix} 1 & 2 & -2 & 1 \\ 0 & 0 & 1 & 1 \\ 0 & 0 & 0 & 0 \end{bmatrix} \Rightarrow \text{Rank} = 2$$



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