

$$\text{Solve } |\mathbf{A}| = \begin{vmatrix} 4 & 2 & -3 & 1 \\ 1 & -3 & 1 & 2 \\ 3 & 1 & 5 & -2 \\ -2 & -5 & 3 & 1 \end{vmatrix} \cdot [104 \text{ 淡江機械 6}]$$

$$[\text{解}] \xrightarrow{R_{21}(-4); R_{23}(-3); R_{24}(2)} \begin{vmatrix} 0 & 14 & -7 & -7 \\ 1 & -3 & 1 & 2 \\ 0 & 10 & 2 & -8 \\ 0 & -11 & 5 & 5 \end{vmatrix} = - \begin{vmatrix} 14 & -7 & -7 \\ 10 & 2 & -8 \\ -11 & 5 & 5 \end{vmatrix}$$

$$= \xrightarrow{C_{21}(-5); C_{23}(4)} \begin{vmatrix} 49 & -7 & -35 \\ 0 & 2 & 0 \\ -36 & 5 & 25 \end{vmatrix} = -2 \begin{vmatrix} 49 & -35 \\ -36 & 25 \end{vmatrix} = -2(49 \cdot 25 - 35 \cdot 36) = 70$$

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