

Evaluate the determinant of the matrix $\begin{bmatrix} 0 & -2 & 1 & 0 \\ 2 & 0 & -2 & 4 \\ -1 & 2 & 0 & 1 \\ 0 & -4 & -1 & 0 \end{bmatrix}$. [99 高師大電子 6]

$$\begin{aligned} \text{[解]} \xrightarrow{R_{32}(2)} & \begin{vmatrix} 0 & -2 & 1 & 0 \\ 0 & 4 & -2 & 6 \\ -1 & 2 & 0 & 1 \\ 0 & -4 & -1 & 0 \end{vmatrix} = - \begin{vmatrix} -2 & 1 & 0 \\ 4 & -2 & 6 \\ -4 & -1 & 0 \end{vmatrix} = 6 \begin{vmatrix} -2 & 1 \\ -4 & -1 \end{vmatrix} = 6(2+4) = 36 \end{aligned}$$

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