



$$|A| = \begin{vmatrix} 2 & 1 \\ 1 & 2 \end{vmatrix} = 2 \cdot 2 - 1 \cdot 1 = \underline{\underline{3}}$$

$$|A| = \begin{vmatrix} 2 & 1 \\ 1 & 2 \end{vmatrix} = \begin{vmatrix} 2 & 1 \\ 5 & 4 \end{vmatrix}$$

$$|B| = \begin{vmatrix} 1 & 2 \\ 2 & 1 \end{vmatrix} = 1 \cdot 1 - 2 \cdot 2 = -\underline{\underline{3}}$$

$$= 2 \cdot 4 - 1 \cdot 5 =$$

$$|F| = \begin{vmatrix} 2 & 1 \\ 4 & 8 \end{vmatrix} =$$

$$|C| = \begin{vmatrix} 2 & 1 \\ 2 & 1 \end{vmatrix} = 2 \cdot 1 - 1 \cdot 2 = \underline{\underline{0}}$$

$$= 8 - 5 = \underline{\underline{3}}$$

$$= 2 \cdot 8 - 1 \cdot 4 = \underline{\underline{12}} = |A+B|$$

$$|D| = \begin{vmatrix} 2 & 1 \\ 3 & 6 \end{vmatrix} = 2 \cdot 6 - 1 \cdot 3 = \underline{\underline{9}}$$

$$\begin{vmatrix} 2 & 1 & 2 \\ 0 & 1 & 2 \\ 6 & 0 & 3 \end{vmatrix} = \underline{\underline{6}}$$

Tk 21/2.4.

$$|A| = \begin{vmatrix} 5 & -4 \\ 1 & 2 \end{vmatrix} = 5 \cdot 2 - (-4) \cdot 1 = \underline{\underline{14}}$$

$$|A| = \begin{vmatrix} 5 & -4 \\ 1 & 2 \end{vmatrix} \xrightarrow{(I) \leftrightarrow (II)} - \begin{vmatrix} 1 & 2 \\ 5 & -4 \end{vmatrix} \xrightarrow{(II) - 5(I)} - \begin{vmatrix} 1 & 2 \\ 0 & -14 \end{vmatrix} = -(-14) = \underline{\underline{14}}$$

T421/2.4

$$|B| = \begin{vmatrix} \cancel{0} & \cancel{-4} & \cancel{6} \\ \cancel{1} & \cancel{-2} & \cancel{3} \\ \cancel{1} & \cancel{0} & \cancel{2} \end{vmatrix} = 0 - 12 + 0 + 12 + 8 + 0 = \underline{\underline{8}}$$

$$|B| = \begin{vmatrix} 0 & -4 & 6 \\ 1 & -2 & 3 \\ 1 & 0 & 2 \end{vmatrix} \xrightarrow{(I) \leftrightarrow (II)} - \begin{vmatrix} 1 & -2 & 3 \\ 0 & -4 & 6 \\ 1 & 0 & 2 \end{vmatrix} \xrightarrow{(III) - (I)} - \begin{vmatrix} 1 & -2 & 3 \\ 0 & -4 & 6 \\ 0 & 2 & -1 \end{vmatrix} \xrightarrow{(III) + \frac{1}{2}(II)} - \begin{vmatrix} 1 & -2 & 3 \\ 0 & -4 & 6 \\ 0 & 0 & 2 \end{vmatrix} = -(-8) = \underline{\underline{8}}$$

Tk 2.1/2.4

$$|D|_{h \times h} = \begin{vmatrix} 1 & 1 & 1 & \dots & 1 \\ 1 & 0 & 1 & \dots & 1 \\ 1 & 1 & 0 & \dots & 1 \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ 1 & 1 & 1 & \dots & 0 \end{vmatrix} \stackrel{(i)-(1)}{=} \begin{vmatrix} 1 & 1 & 1 & \dots & 1 \\ 0 & -1 & 0 & \dots & 0 \\ 0 & 0 & -1 & \dots & 0 \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & 0 & \dots & -1 \end{vmatrix} = \underline{\underline{\left(-1 \right)^{h-1}}}$$

Tk 21/2.5

$$|A| = \begin{vmatrix} 6 & 4 \\ -3 & -2 \end{vmatrix} = -12 + 12 = \underline{0}$$

$$|A| = \begin{vmatrix} 6 & 4 \\ 0 & 0 \end{vmatrix} = \underline{0}$$

(II) $\rightarrow \frac{1}{2}(I)$

$$|B| = \begin{vmatrix} -2 & 1 & 5 \\ -2 & -2 & 3 \\ 1 & 0 & 2 \end{vmatrix} = 8 - 3 + 0 + 10 + 4 + 0 = \underline{\underline{25}}$$

$$|B| = \begin{vmatrix} -2 & 1 & 5 \\ -2 & -2 & 3 \\ 1 & 0 & 2 \end{vmatrix} \xrightarrow{(III) \leftrightarrow (I)} \begin{vmatrix} 1 & 0 & 2 \\ -2 & -2 & 3 \\ -2 & 1 & 5 \end{vmatrix} = - \begin{vmatrix} 1 & 0 & 2 \\ 0 & -2 & 7 \\ 0 & 1 & 9 \end{vmatrix} =$$

$$\xrightarrow{(II) \leftrightarrow (III)} \begin{vmatrix} 1 & 0 & 2 \\ 0 & 1 & 9 \\ 0 & -2 & 7 \end{vmatrix} \xrightarrow{(III) + 2(II)} \begin{vmatrix} 1 & 0 & 2 \\ 0 & 1 & 9 \\ 0 & 0 & 25 \end{vmatrix} = \underline{\underline{25}}$$

(I) \leftrightarrow (II)
(II) \leftrightarrow (I)