

$$B \begin{vmatrix} -\omega & 1 \\ 1 & 1 \end{vmatrix} \quad A \begin{vmatrix} 1 & 1 \\ -1 & 1 \end{vmatrix} \quad \sqrt{(17\omega)^2 + (-4)^2} = \sqrt{94\omega + 16} = 10 \quad (\text{الف})$$

6

$$\frac{-\omega + 1}{1} = -1 \quad \frac{\varepsilon - 1}{1} = 1 \quad \begin{vmatrix} -1 & 1 \\ 1 & 1 \end{vmatrix} \quad (\text{ب})$$

$$\begin{vmatrix} -1 & -1 & 1 \\ -1 & 1 & 1 \end{vmatrix} \quad y = \frac{1 + 1 - 1 \cdot 1}{1} = -1 \quad \begin{vmatrix} -1 & 1 \\ -1 & 1 \end{vmatrix} \quad (\text{الف})$$

$$x = \frac{-1 - 1 + 1}{1} = -1$$

7

$$\frac{1}{1} \begin{vmatrix} -1 & -1 & 1 & 1 \\ -1 & 1 & 1 & 1 \end{vmatrix} = \frac{1}{1} (-1 \cdot 0 - 1 \cdot 1 - 1 \cdot 1 - 1 \cdot 1) = -4 \quad (\text{ب})$$

$$y \rightarrow y \quad x = \frac{y+1}{\varepsilon y - 1} \quad (2) \quad y = \frac{-x-1}{\varepsilon x - 1} \quad (\text{الف})$$

8

$$x \rightarrow -x \quad \varepsilon \omega y - 1 = y + 1$$

$$\varepsilon \omega y - y = x + 1$$

$$y(\varepsilon \omega - 1) = x + 1 \rightarrow y = \frac{x+1}{\varepsilon \omega - 1}$$

$$y + 1 = -\varepsilon \omega x + 1$$

$$y + \varepsilon \omega x = 0$$

$$-x = \frac{y+1}{\varepsilon y - 1}$$

$$y = \frac{-x-1}{\varepsilon x - 1} \quad (\text{ب})$$

$$y = \frac{x-1}{1+\varepsilon \omega} \quad y + 1 = \frac{x-1}{x-\omega} \leftarrow y + 1 = \frac{1(x-1)+1}{x-\omega}$$

$$x' = x - 1 \quad (\text{الف})$$

$$y = \frac{-x-1}{x-\omega} = \frac{-x+1}{x-\omega}$$

$$y' = y + 1$$

9

$$y - 1 = \frac{1(x-1)+1}{x-4} \Rightarrow y = \frac{x-4+1+x-1}{x-4} \Rightarrow y = \frac{2x-4}{x-4} \Rightarrow y = \frac{2(x-2)}{x-4}$$

$$x' = x - 1 \quad (\text{ب})$$

$$\begin{cases} x + y = 1 \\ x - \omega y = 1 \end{cases} \quad \begin{cases} 19x + 19y = 19 \\ 19x - 19\omega y = 19 \end{cases} \quad 19y = -1 \Rightarrow y = -\frac{1}{19}$$

(الف)

10

$$x + \frac{1}{19} = 1 \Rightarrow x = \frac{18}{19}$$

$$x = \frac{\begin{vmatrix} \varepsilon & 1 \\ -\omega & 1 \end{vmatrix}}{\begin{vmatrix} 1 & \varepsilon \\ 1 & -\omega \end{vmatrix}} = \frac{\varepsilon + 1}{-1\omega - \varepsilon} = \frac{1\varepsilon}{+19}$$

$$y = \frac{\begin{vmatrix} 1 & 1 \\ 1 & \varepsilon \end{vmatrix}}{\begin{vmatrix} 1 & \varepsilon \\ 1 & -\omega \end{vmatrix}} = \frac{1-1}{-1\omega - \varepsilon} = -\frac{1}{19} \quad (\text{ب})$$