

$$\begin{aligned} \frac{4}{r} \quad \text{الف} \quad \left| \frac{d}{-r} \right| &\rightarrow m = \frac{r - (-r)}{r - \omega} = -\varepsilon \quad y = -\varepsilon x + 18 \\ y = -\varepsilon x + b &\rightarrow r = -\varepsilon \cdot \varepsilon + b \\ &\rightarrow b = 18 \end{aligned}$$

مرد $x_1, y_1 = 18$ (ب)
 $m_1 = \frac{1}{m_r} \quad m_r = \frac{-1}{r} \rightarrow m_1 = r$
 $\rightarrow y = rx + b$
 $r = \varepsilon \cdot \varepsilon + b \rightarrow b = 18 \rightarrow y = rx + 18$

(ب) $ry + 4x = -1$ $m_1 = m_r$
 $m_1 = \frac{-y}{r} = -r$
 $\rightarrow y = -rx + b \rightarrow r = -\varepsilon \cdot \varepsilon + b \rightarrow b = 18 \Rightarrow y = -rx + 18$

زاویه $\frac{1}{2}$ (ب)
 $m \cdot \tan(\frac{\alpha}{2}) = \frac{1}{\sqrt{r^2 + \varepsilon^2}}$
 $\rightarrow y = rx + b \rightarrow r = \varepsilon \cdot \varepsilon + b \rightarrow b = 18 \Rightarrow y = rx + 18$

فاصله بین دو خط موازی (الف)

فاصله بین دو خط موازی (ب)

$$d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

$$rx + \varepsilon y - r = 0$$

$$\rightarrow d = \sqrt{(r - \varepsilon)^2 + (\varepsilon - (-1))^2}$$

$$\rightarrow \frac{|r(\varepsilon) + \varepsilon(-1) - r|}{\sqrt{\varepsilon^2 + \varepsilon^2}} = \frac{18}{\omega} = r$$

$$\rightarrow d = \sqrt{2\omega} = \omega$$

$$\frac{\varepsilon x + 4y = 18}{rx + \varepsilon y = 4}$$

فاصله بین دو خط (ب)

خط وسط این دو (الف)

$$\frac{|C' - C|}{\sqrt{a^2 + b^2}} = \frac{|4 - 18|}{\sqrt{r^2 + \varepsilon^2}} = \frac{14\sqrt{13}}{13}$$

$$C^* = \frac{C' + C}{2} = \frac{\varepsilon + 4}{2} = d$$

$$\rightarrow \frac{\varepsilon}{2} rx + \frac{\varepsilon}{2} y = d$$

$$\begin{cases} rx - \varepsilon y = r \\ rx - \varepsilon y = 1 \end{cases} \quad \text{نماد شرط}$$

$$\frac{|rx + \varepsilon y - r|}{\sqrt{r^2 + \varepsilon^2}} = \frac{|rx - \varepsilon y - 1|}{\sqrt{r^2 + \varepsilon^2}}$$

$$\begin{aligned} \rightarrow \begin{cases} rx + \varepsilon y - r = rx - \varepsilon y - 1 \rightarrow \omega y - r - r = 0 & y = \frac{r+r}{\omega} \\ rx + \varepsilon y - r = rx + \varepsilon y - 1 - \varepsilon \rightarrow \omega x + y - \varepsilon = 0 & y = -\omega x - \varepsilon \end{cases} \end{aligned}$$

$$\begin{cases} y - rx = \omega \\ y + rx = r \end{cases} \quad \text{زاویه $\frac{1}{2}$ (ب)}$$

$$\tan(\alpha) = \frac{m_1 - m_r}{1 + m_1 m_r}$$

$$\tan(\alpha) = \frac{r - (-r)}{1 + r \cdot \varepsilon} = \frac{\omega}{-\omega} = -1 \rightarrow \text{زاویه } \begin{cases} 135^\circ \\ 45^\circ \end{cases}$$

نصفه الف

$$\sqrt{[3-(-2)]^2 + (-2-2)^2} = \sqrt{4+16} = 10$$

ب) $\begin{vmatrix} \frac{n_1+n_2}{2} \\ \frac{y_1+y_2}{2} \end{vmatrix} \Rightarrow \begin{vmatrix} \frac{-5+3}{2} \\ \frac{-2+2}{2} \end{vmatrix} = \begin{vmatrix} -1 \\ 0 \end{vmatrix}$

سر رأس كـ صـ ١ ٢ ٣

الف $\rightarrow \begin{vmatrix} \frac{n_1+n_2+n_3}{3} \\ \frac{y_1+y_2+y_3}{3} \end{vmatrix} \Rightarrow \begin{vmatrix} \frac{3-2-1}{3} \\ \frac{1+2-1}{3} \end{vmatrix} = \begin{vmatrix} 0 \\ 0 \end{vmatrix}$

مسافة $\frac{1}{2} \begin{vmatrix} 3 & -2 & -1 \\ 1 & 2 & -1 \end{vmatrix} = \frac{1}{2} |-2-2-9+2+10| = 22$

قرينة خط

$y = \frac{2n+1}{5n-2} \rightarrow n = \frac{2y+1}{5y-2}$

دارين : $n = \frac{2y+1}{5y-2} \Rightarrow y = \frac{2n+1}{5n-2}$

الف $y = \frac{2n+1}{5n-2}$

قرينة خط

ب) $n = \frac{2y+1}{5y-2} : y = \frac{2n-1}{5n+2}$

دارين : $-n = \frac{-2y+1}{-5y-2} \rightarrow y = \frac{-2n+1}{-5n-2}$

$y = \frac{2n+1}{5n-2}$

$y+2 = \frac{2n-5+1}{n-2-2} \rightarrow y = \frac{2n-4}{n-4} + 2 = \frac{5n-18}{n-4}$

الف $\begin{vmatrix} 2 \\ -2 \end{vmatrix} : y' = y+2$

ب) $\begin{vmatrix} 2 \\ 2 \end{vmatrix} : y' = y-2 \rightarrow y-2 = \frac{2n-4+1}{n-2-2} \rightarrow y = \frac{2n-3}{n-4} + 2 = \frac{5n-11}{n-4}$

$\begin{cases} 2n+5y=2 \\ n-5y=1 \end{cases} \begin{vmatrix} 2 & 5 \\ 1 & -5 \end{vmatrix} = -10$

ب) $n = -\frac{14}{-19} \quad y = \frac{1}{-19}$
 $\rightarrow n = \frac{14}{19} \quad y = \frac{-1}{19}$

روش حفران : $\begin{cases} 2n+5y=2 \\ 2n-15y=2 \end{cases} \begin{vmatrix} 2 & 5 \\ 2 & -15 \end{vmatrix} = -32$
 $19y = -1 \quad y = \frac{-1}{19} \quad n = \frac{14}{19}$