

کلیف ۱۵

بازدهم دفتر C

بناشیه مساله نظری

A(۴,۲)

$$m_{AB} = \frac{2 - (-2)}{4 - 0} = -2$$

(الف) ①

B(0,-2)

$$y = ax + b \rightarrow y = -2x + b \rightarrow \boxed{y = -2x + 18} \quad (۴,۲)$$

$$2y + 4x = -1 \rightarrow m = \frac{-4}{2} = -2 \rightarrow y = -2x + b$$

$$y = ax + b$$

(۴,۲)

$$\boxed{y = -2x + 10}$$

$$x + 2y = 1 \rightarrow m = \frac{-1}{2} \rightarrow m_{AB} = 2$$

$$y = 2x + b$$

A(۴,۲)

$$\boxed{y = 2x - 10}$$

$$\tan \frac{\pi}{4} = \sqrt{3} = m$$

$$y = \sqrt{3}x + b$$

A(۴,۲)

$$\boxed{y = \sqrt{3}x - 4\sqrt{3} + 2}$$

$$d = \sqrt{(4-0)^2 + (2-(-2))^2} = 2\sqrt{5} \rightarrow d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \quad (الف) ②$$

A(۴,۲) و B(0,2)

$$rx + ry - r = 0 \quad d = \frac{|ax' + by' + c|}{\sqrt{a'^2 + b'^2}} \quad (1)$$

$$d = \frac{|r(r) + r(r) - r|}{\sqrt{r^2 + r^2}} = \frac{r}{2}$$

$$\left. \begin{array}{l} rx + ry = 9 \longrightarrow rx + ry = 4 \\ rx + ry = 1 \xrightarrow{-r} rx + ry = r \end{array} \right\} \longrightarrow rx + ry = \frac{r+9}{2} = d \quad (الف) \quad \boxed{rx + ry = d}$$

$$\begin{array}{l} rx + ry = 9 \\ rx + ry = r \end{array} \quad d = \frac{|c - c'|}{\sqrt{a'^2 + b'^2}} = \frac{r}{\sqrt{r^2 + 9}} = \frac{r\sqrt{13}}{13} \quad (ب)$$

(ج) فاصلہ دو خطوں کے درمیان

$$\frac{|rx - ry - 1|}{\sqrt{r^2 + 9}} = \frac{|rx + ry - r|}{\sqrt{r^2 + 9}} \quad |rx - ry - 1| = |rx + ry - r|$$

$$\begin{array}{l} rx - ry - 1 = rx + ry - r \\ \boxed{rx - 2y = -r} \\ rx - ry - 1 = -rx - ry + r \\ \boxed{2x + y = r} \end{array}$$

$$\tan \alpha = \left| \frac{m - m'}{1 + mm'} \right| \quad m = -r \quad m' = r \quad (د)$$

$$\tan \alpha = \left| \frac{-r - r}{1 - r} \right| = 1 \longrightarrow \alpha = 45^\circ \longrightarrow \beta = 180^\circ - 45^\circ = 135^\circ$$

$$A \begin{vmatrix} r \\ -r \end{vmatrix} \quad B \begin{vmatrix} -8 \\ r \end{vmatrix}$$

$$d = \sqrt{(-8 - r)^2 + (r - (-r))^2} = 10$$

(الف) (د)

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

$$M\left(\frac{x_A + x_B}{2}, \frac{y_A + y_B}{2}\right) \rightarrow M(-1, 1)$$

(ب)

$$A \begin{vmatrix} 1 & 1 \\ 1 & 1 \end{vmatrix} B \begin{vmatrix} -1 & 1 \\ 1 & 1 \end{vmatrix} C \begin{vmatrix} -1 & 0 \\ 0 & -1 \end{vmatrix}$$

(د)

$$G\left(\frac{x_A + x_B + x_C}{3}, \frac{y_A + y_B + y_C}{3}\right)$$

(الف)

$$G(-1, -1)$$

(ب)

$$\frac{1}{F} \begin{vmatrix} 1 & 1 & 1 \\ 1 & -1 & 1 \\ -1 & 0 & 1 \end{vmatrix} =$$

$$|-1 - 1 - 1 - 1 + 1 + 1| = -2$$

$$S = \frac{1}{F} \times 2 = \frac{2}{F}$$

$$-y = \frac{x+1}{x-1} \xrightarrow{y' = -y} -y = \frac{x+1}{x-1}$$

(الف) ①

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

$$y = \frac{x+1}{x-1} \xrightarrow{x' = -x} y = \frac{-x+1}{-x-1} \rightarrow y = \frac{x-1}{x+1}$$

(ب)

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

(ج)

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

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

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

(د)

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

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

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

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

$$y = \frac{r(x+1)}{x-r} \quad x' = x-r \rightarrow x = x'+r$$

(الف) ٩

$$y'-r = \frac{r(x'+r)+1}{x'+r-r} \rightarrow y'-r = \frac{rx'+\Delta}{x'-1}$$

$$y' = \frac{rx'+\Delta}{x'-1} + r$$

$$y' = \frac{rx'+\Delta+rx'-r}{x'-1} = \frac{\Delta x'+r}{x'-1}$$

$$\boxed{y = \frac{\Delta x+r}{x-1}}$$

(ب)

$$x' = x-r \rightarrow x = x'+r$$

$$y' = y-r \rightarrow y = y'+r$$

$$y'+r = \frac{r(x'+r)+1}{x'+r-r}$$

$$y'+r = \frac{rx'+V}{x'} \rightarrow y' = \frac{V}{x'} \rightarrow y = \frac{V}{x}$$

$$\begin{cases} rx+ry=r \\ (x-\Delta y=1) \end{cases} \xrightarrow{\times(-r)} \begin{cases} rx+ry=r \\ -rx+1\Delta y=-r \end{cases}$$

(الف) ١٠

$$19y = -1 \rightarrow y = \frac{-1}{19} \quad x = \frac{19}{19}$$

$$\begin{cases} rx+ry=r \\ x-\Delta y=1 \end{cases}$$

(ب)

$$x = -\frac{19}{-19} = \frac{19}{19} \quad y = \frac{1}{-19} = \frac{-1}{19}$$