

$$A(2, 2), B(5, -1) \rightarrow m = \frac{2+1}{2-5} = -1$$

(الف)

$$y = -x + h \quad \rightarrow \quad y = -x + 18$$

(ب)

$$y = -\frac{2}{3}x - \frac{1}{3}, A(2, 2) \rightarrow 2 = -\frac{2}{3} \cdot 2 + h \quad \rightarrow \quad y = -\frac{2}{3}x + \frac{14}{3}$$

(ج)

$$y = \frac{1}{2}x + \frac{1}{2} \rightarrow m = \frac{1}{2}, A(2, 2) \rightarrow y = \frac{1}{2}x + h \quad \rightarrow \quad y = \frac{1}{2}x - 1$$

$$m = \tan 45^\circ = 1 \rightarrow y = x + h \rightarrow y = x - 4 + 2 \quad \rightarrow \quad y = x - 2$$

$$A(2, 3), B(-1, 7) \rightarrow L = \sqrt{(2+1)^2 + (3-7)^2} = 5$$

(الف-2)

$$A(2, 3), 3x + 4y - 5 = 0 \rightarrow L = \frac{3 \cdot 2 + 4 \cdot 3 - 5}{\sqrt{3^2 + 4^2}} = \frac{10}{5} = 2$$

(ب)

$$A: 3x + 4y - 5 = 0 \quad \rightarrow \quad -3 - 4 = -5$$

(الف-3)

$$B: 2x + 3y - 7 = 0 \quad \rightarrow \quad 2x + 3y - 5 = 0$$

$$\frac{|K-K'|}{\sqrt{a^2+b^2}} = \frac{|-4+3|}{\sqrt{3^2+2^2}} = \frac{1}{\sqrt{13}} = \frac{1\sqrt{13}}{13}$$

(ب)

$$\frac{2x-2y-1}{5} = \pm \frac{(2x+3y-3)}{5} \quad \begin{cases} x-2y+2=0 \\ 2x+y-2=0 \end{cases}$$

$$y = \frac{2}{3}x - 2$$

$$y = -\frac{2}{3}x + 2$$

$$\theta = \beta - \alpha$$

$$\tan(\theta) = \frac{-2-2}{1-4} = \frac{-4}{-3} = \frac{4}{3} \rightarrow \theta = 53^\circ$$

$$A(2, -2), B(-2, 4) \rightarrow L = \sqrt{(2+2)^2 + (-2-4)^2} = 10$$

(ج)

$$\text{الف) } L = 10$$

$$\begin{cases} m_x = \frac{3-5}{2} = -1 \\ m_y = \frac{4-2}{-2} = 1 \end{cases} \rightarrow m(-1, 1)$$

$$Gx = \frac{-1 + 3 - 2}{3} = -2, Gy = \frac{-1 + 3 + 1}{3} = -2 \Rightarrow (G(-2, -2)) \text{ (الف-7)}$$

$$AB \text{ خط: } m = \frac{-2 - 2}{3 - 1} = -2 \rightarrow y = -2x + b \rightarrow y = -2x - 2 \text{ (ب)}$$

$$AB = \sqrt{(-2 - 2)^2 + 2^2} = \sqrt{20}$$

$$CH = \frac{|-1 + 3 - 2|}{\sqrt{1 + 2^2}} = \frac{2}{\sqrt{5}} = \frac{\sqrt{20}}{5} \quad \left. \vphantom{CH} \right\} S = \frac{\sqrt{20}}{\sqrt{20}} \times \sqrt{20} \times \frac{1}{2} = 3 \text{ (ج)}$$

$$-y = \frac{2x + 1}{x - 2} \rightarrow y = \frac{-2x - 1}{x - 2} \text{ (الف-8)}$$

$$x \text{ ها قمرینه} \rightarrow y = \frac{-2x + 1}{-2x - 3} \text{ (ب)}$$

$$3 \text{ و } 2 \text{ نيمساز ۱ و ۲} \rightarrow \text{باي } x \text{ عوض} \rightarrow x = \frac{2y + 1}{2y - 3} \rightarrow y(2x - 3) = 2y + 1 \text{ (ج)}$$

$$y = \frac{2x + 1}{2x - 3}$$

$$2 \text{ و } 3 \text{ نيمساز ۱ و ۲} \rightarrow -x = \frac{-2y + 1}{-2y - 3} \rightarrow 2xy + 3x = -2y + 1 \text{ (د)}$$

$$y(2x + 3) = 1 - 3x$$

$$y = \frac{1 - 3x}{2x + 3}$$

$$x' = x - 2, y' = y + 3 \rightarrow x = x' + 2, y = y' - 3 \text{ (الف-9)}$$

$$y' - 3 = \frac{2x' + 5 + 1}{x' + 1} \Rightarrow y' = \frac{2x' + 6}{x' + 1} + 3 = \frac{5x' + 9}{x' + 1}$$

$$x' = x - 3, y' = y - 2 \rightarrow x = x' + 3, y = y' + 2 \text{ (ب)}$$

$$y' + 2 = \frac{2x' + 4 + 1}{x' + 3 - 3} \rightarrow y' = \frac{2x' + 5 - 2x'}{x'} = \frac{5}{x'}$$

$$\begin{cases} 3x + 2y = 2 \\ x - 5y = 1 \\ 23x + 15y = -3 \end{cases} \text{ حذف}$$

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

$$x + \frac{5}{19} = 1 \rightarrow x = -\frac{14}{19}$$

$$\begin{cases} 3x + 2y = 2 \\ x - 5y = 1 \end{cases} \text{ کرامر} \quad -10$$

$$x = -\frac{\begin{vmatrix} 2 & 2 \\ 1 & -5 \end{vmatrix}}{\begin{vmatrix} 3 & 2 \\ 1 & -5 \end{vmatrix}} = \frac{2 + 2}{-15 - 2} = \frac{-14}{19}$$

$$y = \frac{\begin{vmatrix} 3 & 1 \\ 1 & -5 \end{vmatrix}}{\begin{vmatrix} 3 & 2 \\ 1 & -5 \end{vmatrix}} = \frac{-15 - 1}{-15 - 2} = \frac{-16}{17}$$