

$$(4x+2)(5x-2) \rightarrow \begin{cases} 4a+b=2 \\ 20a+b=-2 \end{cases} \rightarrow \begin{cases} a=-\frac{4}{16} \\ b=18 \end{cases} \quad y = -\frac{4}{16}x + 18 \quad \text{(الف)}$$

$$m = -\frac{4}{5} = -\frac{4}{5} \rightarrow -\frac{4}{5}x + b = 2 \rightarrow b = 14 \quad y = -\frac{4}{5}x + 14 \quad \text{(ب)}$$

$$m = -\frac{1}{5} \xrightarrow{\text{عکس درجه}} m' = 5 \rightarrow 5x + b = 2 \rightarrow b = -1. \quad y = -\frac{4}{5}x + 14 \quad \text{(ج)}$$

$$\tan \frac{\pi}{4} = \sqrt{3} = m \quad \sqrt{3}x + b = 2 \rightarrow b = 2 - 4\sqrt{3} \quad y = \sqrt{3}x + 2 - 4\sqrt{3} \quad \text{(د)}$$

$$\sqrt{(4+9)^2 + (2-1)^2} = \sqrt{9+19} = 5 \quad \text{(الف)}$$

$$\frac{|4+12-3|}{\sqrt{4+19}} = \frac{13}{5} = 3 \quad \text{(ب)}$$

$$2x+3y-4=0 \xrightarrow{\times 2} \begin{cases} 4x+6y-8=0 \\ 4x+9y-12=0 \end{cases} \quad ax+by=C+\frac{C'}{r} \rightarrow 4x+9y+10=0 \quad \text{(الف)}$$

$$d = \frac{|C-C'|}{\sqrt{a^2+b^2}} = \frac{|-12+10|}{\sqrt{4+9}} = \frac{2}{\sqrt{13}} = \frac{2}{\sqrt{13}} \quad \text{(ب)}$$

$$\frac{|ax^2+bx+c|}{\sqrt{a^2+b^2}} = \frac{|a'x^2+b'x+c'|}{\sqrt{a'^2+b'^2}} \rightarrow \frac{|2x-3y-1|}{\sqrt{4+9}} = \frac{|2x+3y-2|}{\sqrt{4+9}}$$

$$\rightarrow |2x-3y-1| = |2x+3y-2| \begin{cases} 2x-3y-1 = 2x+3y-2 \rightarrow x-6y+1=0 \\ 2x-3y-1 = -(2x+3y-2) \rightarrow 4x+6y-3=0 \end{cases}$$

$$\tan \alpha = \left| \frac{m-m'}{1+mm'} \right| = \left| \frac{-\frac{2}{3}-2}{1+(-\frac{2}{3})(2)} \right| = 1 \rightarrow \tan \alpha = 1 \rightarrow \alpha = \frac{\pi}{4}$$

$$m = -\frac{2}{3}$$

$$m' = 2$$

(الف) $\sqrt{(3+5)^2 + (-2-4)^2} = \sqrt{64+36} = 10$ (ب) $M = \begin{vmatrix} \frac{3-5}{2} = -1 \\ -\frac{2+4}{2} = -3 \end{vmatrix}$	٦
(الف) مركز ثقل $\begin{vmatrix} x = \frac{3-10}{3} = -3 \\ y = \frac{1+13}{3} = -4 \end{vmatrix} \begin{vmatrix} -3 \\ -4 \end{vmatrix}$ (ب) $S = \frac{1}{6} \begin{vmatrix} 3 & 1 & 1 \\ -2 & 3 & 1 \\ -10 & -13 & 1 \end{vmatrix} = \frac{1}{6} 9-10+24+10+29+1 = \frac{99}{6} = 16.5$	٧
(الف) $y' = -y \quad -y = \frac{2x+1}{5x-2} \rightarrow y = -\frac{2x+1}{5x-2}$ (ب) $x' = -x \quad y = \frac{-2x+1}{-5x-2}$ (ج) $x = \frac{2y+1}{5y-2} \rightarrow y = \frac{2+1}{5x-2} = \frac{3x+1}{5x-2} = y \rightarrow y = \frac{3x+1}{5x-2}$ (د) $-x = \frac{-2y+1}{-5y-2} \rightarrow x = \frac{2y-1}{-5y-2} \quad y = \frac{2x-1}{-5x-2} \rightarrow \frac{2x-1}{-5x-2} = y$	٨
(الف) $y' = y+2 \quad x' = x-2 \quad y' = \frac{2x'+4+1}{x'+2-2} \rightarrow y' = \frac{2x'+5}{x'-1} + 2 =$ $y' = \frac{2x'+2}{x'-1}$ (ب) $y' = y-2 \quad x' = x+2 \quad y'+2 = \frac{2x'+4+1}{x'+2-2} \rightarrow y' = \frac{2x'+5}{x'} - 2 = \frac{2}{x'}$	٩
(الف) $\begin{cases} 3x+5y=2 \\ x-5y=1 \end{cases} \xrightarrow{\times 5} \begin{cases} 3x+5y=2 \\ 5x-25y=5 \end{cases} \rightarrow 19y=-1 \rightarrow y = -\frac{1}{19} \quad x = \frac{15}{9}$ (ب) $x = -\frac{12+10}{-5-12} = \frac{-22}{-17} = \frac{11}{9} \quad y = \frac{9-4}{-5-12} = \frac{5}{-17} = -\frac{1}{9}$	١٠