

1. الف) $\left. \begin{array}{l} ax+b=y \rightarrow ka+b=p \\ \Delta a+b=-p \end{array} \right\} \begin{array}{l} a=-k \\ b=1\Delta \end{array} \rightarrow -kx+1\Delta=y$

ب) $py+qx=-1 \rightarrow py+qx=c' \xrightarrow{|f|} k+pk=c' \rightarrow c'=p\Delta$ ۲

$py+qx=p\Delta \rightarrow y+px=1k \rightarrow y=1k-px$

ج) $x+py=1 \rightarrow \frac{-x+1}{p}=y \xrightarrow{m=-\frac{1}{p}} m'=p \rightarrow px+b=y \xrightarrow{|f|} 1p+b=p \rightarrow b=-1$

$px-1=y$

د) $\tan \frac{\pi}{p} = \sqrt{p} \rightarrow \sqrt{p}x+b=y \xrightarrow{|f|} k\sqrt{p}+b=p \rightarrow b=p-k\sqrt{p}$

$\sqrt{p}x+p-k\sqrt{p}=y$

2. الف) $\sqrt{\frac{(p+1)^p}{9} + \frac{(p-1)^p}{19}} = \sqrt{p\Delta} = \Delta$ ۲

ب) $\left. \begin{array}{l} px+ky=k \\ |p| \end{array} \right\} \rightarrow \frac{|px+ky+k-k|}{\sqrt{9+19}} = \frac{\Delta}{\Delta} = k$

$kx+py=1$ $\begin{cases} px+ky=p \\ kx+py=1p \end{cases}$

3. الف) $kx+py = \frac{c+c'}{p} \rightarrow$

$kx+py = \frac{1+1p}{p} \rightarrow \boxed{kx+py=1}$

ب) $\frac{|1p-1|}{\sqrt{19+pk}} = \frac{k}{\sqrt{p\Delta}} \rightarrow \frac{p\sqrt{1p}}{\Delta p} = \frac{p\sqrt{1p}}{1p}$

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$$kx - py = 1$$

$$px + ky = k$$

$$\frac{|kx - py - 1|}{\sqrt{q+k}} = \frac{|px + ky - k|}{\sqrt{q+k}} \rightarrow$$

$$kx - py - 1 = px + ky - k \rightarrow x + p = qy \rightarrow \boxed{\frac{x}{q} + \frac{p}{q} = y}$$

$$kx - py - 1 = -px - ky + k \rightarrow qx - k = -y \rightarrow \boxed{y = k - qx}$$

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$$\tan \alpha = \frac{|m - m'|}{1 + mm'} \rightarrow \frac{|p - -k|}{1 - q} = \left| \frac{q}{-q} \right| = +1 \rightarrow \tan \alpha = +1$$

.5

$$y + kx = k \quad y - px = q \rightarrow y = q + px$$

$$y = k - kx$$

$$\alpha = \frac{k}{q}$$

$$\sqrt{\frac{(k - q)^2}{q^2} + \frac{(-p - k)^2}{k^2}} = \sqrt{1 + 0} = 1$$

6. الف

ب

$$\frac{k - q}{p} = -1 \quad \frac{k - p}{p} = 1$$

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$$\frac{k - p - 1}{k} = -k$$

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

7. الف

$$\frac{1}{p} \times \begin{vmatrix} k & -p & -1 \\ 1 & k & -1k \\ 1 & 1 & 1 \end{vmatrix} = \frac{1}{p} \times 99 = 99$$

ب

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$$9 - 1 + k - (-k) = 99$$

$$y \rightarrow -y \rightarrow -y = \frac{px+1}{kx-k} \rightarrow y = \frac{-1-px}{k-px}$$

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

(ب)

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(ج)

$$\begin{array}{l} y \rightarrow x \\ x \rightarrow y \end{array} \rightarrow x = \frac{py+1}{ky-k} \rightarrow kxy - kx = py+1 \rightarrow kxy - py = kx+1 \rightarrow$$

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

$$\begin{array}{l} y \rightarrow -x \\ x \rightarrow -y \end{array} \rightarrow -x = \frac{-py+1}{-ky-k} \rightarrow x = \frac{+1-ky}{ky+k} \rightarrow kxy + kx = +1 - ky \rightarrow$$

$$kxy + ky = -kx+1 \rightarrow y(kx+k) = -kx+1 \rightarrow y = \frac{-kx+1}{kx+k}$$

$$\begin{array}{l} x' = x - p \rightarrow x = x' + p \\ y' = y + k \rightarrow y = y' - k \end{array} \quad \begin{array}{l} (الف) \\ 9 \end{array}$$

$$y' - k = \frac{p(x'+p)+1}{(x'+p)-k} \rightarrow y' - k = \frac{px' + k + 1}{x' - 1} \rightarrow$$

$$y' = \frac{px' + 1}{x' - 1} + k \rightarrow y' = \frac{px' + 1 + kx' - k}{x' - 1} \rightarrow \boxed{y' = \frac{p + kx' + 1}{x' - 1}}$$

(ب)

$$\begin{array}{l} x = x' + k \\ x' = x - k \end{array}$$

$$\begin{array}{l} y' = y - p \rightarrow y' + p = \frac{k(x'+k)+1}{(x'+k)-k} \rightarrow y' + p = \frac{kx' + p + 1}{x'} \rightarrow \\ y = y' + p \end{array}$$

$$y' + p = \frac{kx' + p + 1}{x'} \rightarrow y' = \frac{kx' + p + 1}{x'} - p \rightarrow \boxed{y' = \frac{1 - px' + p}{x'}}$$

$$10x + ky = P$$

10. الف

$$x - 10y = 1 \rightarrow 10x - 100y = 10 \quad (-) \rightarrow 19y = -1 \rightarrow y = -\frac{1}{19}$$

$$10x - \frac{10}{19} = P \rightarrow 10x = + \frac{10P}{19} \rightarrow x = + \frac{1P}{19}$$

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$$x = - \frac{k + 10}{-10 - k} = + \frac{10}{19}$$

$$y = \frac{10 - P}{-10 - k} = - \frac{1}{19}$$