نام و نام خانوادگی: کیمیا رحیمی شماره داوطلبی: 15 پایه دهم دختر A

(۱۸)

1

الف) $A\begin{vmatrix}\xi\\ \tau\end{vmatrix}$ $y=-\xi x+b$ $\Rightarrow y=-\xi x+1\Lambda$ $\Leftarrow a=\frac{\tau+\tau}{\xi-\Delta}=-\xi$

$\tau=-1\Lambda+b$

ب) $y=-\tau x-1$

ج) $y=-\tau x+b \xleftarrow{\perp} y=\frac{1}{\tau}x+b$ $\Rightarrow y=\frac{1}{\tau}x+\frac{1}{\tau}$

$y=\tau x+b \xleftarrow{\parallel} \begin{vmatrix}\xi\\ \tau\end{vmatrix}$

$y=\tau x-1\cdot$

$y=-\tau x+1\xi \Leftarrow \tau=-11+b$

د) $m=\sqrt{\tau} \longrightarrow y=\sqrt{\tau}x+b \xrightarrow{(\xi,1)} y=\sqrt{\tau}m-\xi\sqrt{\tau}+\tau$

2

الف) $\begin{vmatrix}-1\\ \vee\end{vmatrix}$ $\sqrt{(\tau+1)^{\tau}+(\tau-\vee)^{\tau}}=\sqrt{9+1\xi}=\boxed{\Delta}$

ب) $\tau x+\xi y=\tau$

$\frac{|ax+by+c|}{\sqrt{a^{\tau}+b^{\tau}}}=\frac{|9+1\tau-\tau|}{\sqrt{9+1\xi}}=\frac{1\Delta}{\Delta}=\tau$

3

$\tau x+\xi y=\Lambda$ $(\tau x+\tau y=9)\times\tau \rightarrow \xi x+\xi y=1\tau$

الف) $1\tau x+\xi y=1\cdot$

$ax+by=\frac{c+c'}{\tau}$

ب) $\frac{|c-c'|}{\sqrt{a^{\tau}+b^{\tau}}}=\frac{|1\tau-\Lambda|}{\sqrt{1\xi+\tau\xi}}=\frac{\xi}{\sqrt{\Delta\tau}}=\frac{\tau\sqrt{1\tau}}{1\tau}$

4

$\tau x-\tau y=1$ $\tau x+\tau y=\tau$

$\frac{|a'x+b'y-c'|}{\sqrt{a'^{\tau}+b'^{\tau}}}=\frac{|ax+by-c|}{\sqrt{a^{\tau}+b^{\tau}}} \Rightarrow \frac{|\tau x-\tau y-1|}{\sqrt{1\tau}}=\frac{|\tau x+\tau y-\tau|}{\sqrt{1\tau}}$

$|\tau x-\tau y-1|=|\tau x+\tau y-\tau| \Rightarrow \tau x-\tau y-1=\tau x+\tau y+\tau \Rightarrow x-\Delta y=-\tau$

$\tau x-\tau y-1=-\tau x-\tau y+\tau \Rightarrow \Delta x+y=\xi$

5

$y=-\tau x+\tau$ $y=\tau x+\Delta$

$\tan\alpha=\left|\frac{a-a'}{1+aa'}\right| \Rightarrow \left|\frac{\tau+\tau}{1-9}\right|=1 \Rightarrow \alpha=\tau\Delta^{\circ}$

6

ا) $B\begin{vmatrix} -5 \\ 4 \end{vmatrix}$ $A\begin{vmatrix} 2 \\ -2 \end{vmatrix}$ $\sqrt{(2+5)^2+(-4)^2} = \sqrt{9+16} = \sqrt{25} = 5$

ب) $\begin{vmatrix} -1 \\ 1 \end{vmatrix}$ $\frac{2-3}{2} = -1$ $\frac{-5+2}{2} = -1$

ج)

7

الف) $\begin{vmatrix} -2 \\ -2 \end{vmatrix}$ $\begin{vmatrix} 2 \\ 1 \end{vmatrix}$ $\begin{vmatrix} -2 \\ 2 \end{vmatrix}$ $\begin{vmatrix} -10 \\ -12 \end{vmatrix}$ $y = \frac{-12-2+1}{3} = -3$

$x = \frac{-10-2+2}{-2} = 5$

ج)

ب) $\frac{1}{2}\begin{vmatrix} 2 & -4 & -12 \\ 2 & 3 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{1}{2}(-30-2-36+40+6+12) = \frac{1}{2}(14) = 7$

8

الف) $y = \frac{-2x-1}{3x-4}$ 2. $y \longrightarrow x$ $x = \frac{-4y+1}{3y-2}$

ب) $y = \frac{-2x+1}{-3x-4}$ 1,5 $x \longrightarrow -x$

$3xy - 2x = -4y - 1$

$3xy + 4y = 2x - 1$

$y(3x+4) = 2x - 1$

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

ج) $x = \frac{-4y-1}{3y-2}$

9

الف) $x' = x - 2$ $y' = y + 2$

$x = x' + 2$ $y = y' - 2$

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

$y' = \frac{2x'+5}{x'-1} + 2 = \frac{4x'+7}{x'-1}$

$y = \frac{4x+7}{x-2}$

0,5

ب) $x' = x - 4$ $y' = y - 2$

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

$y = \frac{2x-3}{x-4} - 2 = \frac{2x-3-2x+8}{x-4} = \frac{5}{x-4}$

$y' = \frac{5}{x'}$

ج) $y - 2 = \frac{2(x-2)+1}{x-4} \Rightarrow y = \frac{2x-4+1+2x-8}{x-4} \Rightarrow y = \frac{4x-11}{x-4}$

10

الف) $\begin{cases} 2x + 3y = 2 \\ x - 5y = 1 \end{cases}$ $\begin{cases} 2x + 3y = 2 \\ -2x + 10y = -2 \end{cases}$

$13y = -1 \Rightarrow y = -\frac{1}{13}$

$x = 1 + 5y \Rightarrow x = \frac{13}{13} - \frac{5}{13} = \frac{8}{13}$

ج)

ب) $x = \frac{\begin{vmatrix} 2 & 3 \\ 1 & -5 \end{vmatrix}}{\begin{vmatrix} 2 & 3 \\ 1 & -5 \end{vmatrix}} = \frac{-10-3}{-10-3} = 1$

$y = \frac{\begin{vmatrix} 2 & 2 \\ 1 & 1 \end{vmatrix}}{\begin{vmatrix} 2 & 3 \\ 1 & -5 \end{vmatrix}} = \frac{2-2}{-10-3} = 0$