(۷)

$\begin{cases} y - ax = 1 \longrightarrow m = a \\ ay - x = a - 1 \longrightarrow m = \frac{1}{a} \end{cases} \longrightarrow a = \frac{1}{a}$

$a^2 = 1 \rightarrow a = \pm 1$

if $a = 1 \rightsquigarrow \begin{cases} y - x = 1 \\ y - x = 0 \end{cases}$ $A(1,2)$

if $a = -1 \rightarrow \begin{cases} x + y = 1 \\ y - x = -1 \end{cases}$ $\begin{cases} x - y + 1 = 0 \\ x - y = 0 \end{cases}$

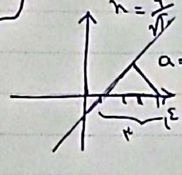
$d = \frac{|1-0|}{\sqrt{1+1}} = \frac{1}{\sqrt{2}}$ $x^2 + \frac{1}{2} = 5^2$ $x = \frac{7}{\sqrt{2}}$

$x^2 + \frac{1}{2} = 25 \rightarrow x^2 = \frac{49}{2}$

$S = \frac{7}{\sqrt{2}} \times \frac{1}{\sqrt{2}} = 3/5$

(۸)

$x = \frac{9}{\sqrt{10}}$ $x - 3y - 1 = 0$



$d = \frac{|4-1|}{\sqrt{1+9}} = \frac{3}{\sqrt{10}}$

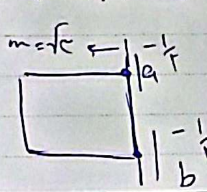
$x = \sqrt{9 - \frac{9}{10}} = \sqrt{\frac{81}{10}} = \frac{9}{\sqrt{10}}$ $S = \frac{1}{2} \times \frac{3}{\sqrt{10}} \times \frac{9}{\sqrt{10}} = 1/35$

(۹)

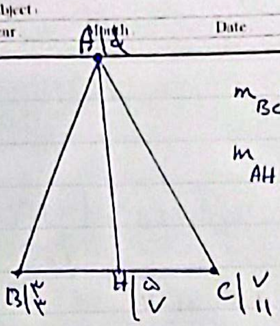
$m = \frac{b-a}{-\frac{1}{3}+\frac{1}{2}} = \sqrt{3} \longrightarrow b - a = \frac{\sqrt{3}}{6}$

$AB = \sqrt{(-\frac{1}{3}+\frac{1}{2})^2 + (b-a)^2} = \sqrt{\frac{1}{36} + \frac{3}{36}} = \frac{1}{3}$

قطر $\longrightarrow a\sqrt{2} \longrightarrow \frac{1}{3} \times \sqrt{2} = \frac{\sqrt{2}}{3}$



(۴)



$m_{BC} = \frac{11-3}{7-4} = 2$

$m_{AH} = -\frac{1}{2}$ ← عکس قرینه

$3 = 2(3) + b$

$b = -3 \rightarrow y = 2x - 3$

$9 = -\frac{1}{2}(1) + b$

$b = 9 + \frac{1}{2} = \frac{19}{2} \rightarrow y = -\frac{1}{2}x + \frac{19}{2}$ $\times 2$

$2y = -x + 19$

$\begin{cases} y - 2x + 3 = 0 \\ \times 2 \; (2y + x - 19 = 0) \end{cases} \longrightarrow \begin{cases} y - 2x + 3 = 0 \\ 4y + 2x - 38 = 0 \end{cases}$

$5y = 35 \rightarrow y = 7$

$y - 2x + 3 = 0$

$2x = 10$

$x = 5 \longrightarrow H\begin{vmatrix}5\\7\end{vmatrix}$

$AH = \sqrt{4 + 16} = \sqrt{20} = 2\sqrt{5}$

(۵)

$B \begin{cases} AB: y + 2x = 7 \\ BC: 2y - 7x = -19 \end{cases} \longrightarrow \begin{cases} x = 3 \\ y = 1 \end{cases}$

$\begin{cases} -2y - 4x = -14 \\ 2y - 7x = -19 \end{cases}$ $y + 6 = 7$

$-11x = -33$ $y = 1$

$x = 3$ $BH = \frac{|\ldots|}{\sqrt{\ldots}} = 4/4$

سوال ۱۰:

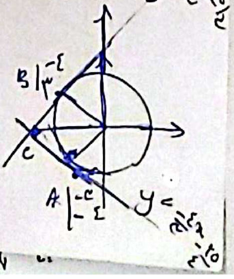
$\frac{4}{3}x + \frac{25}{3} = \frac{-3}{4}x - \frac{25}{4}$

$\xrightarrow{\times 12} 16x + 100 = -9x - 75$

$\longrightarrow 25x = -175 \rightsquigarrow x = -7$

$y = -1$ $C = (-7, -1)$

$-7x - 1 = 7$



(۶)

$m = \frac{\Delta y}{\Delta x} = \frac{-4-0}{0-(-\frac{2}{4})} = \boxed{-8}$

$\begin{cases} y = -8x - 4 \\ y = x \end{cases} \rightsquigarrow \begin{cases} y + 8x + 4 = 0 \\ -1 \times \; y - x = 0 \end{cases}$

$9x + 4 = 0$

قطر $\Rightarrow a\sqrt{2} \longrightarrow \frac{2}{3} \times \sqrt{2} = \frac{2\sqrt{2}}{3}$ $x = -\frac{4}{9} = \boxed{\frac{-2}{3}}$

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سلام — اگر از من نمره کم نمی‌کنید ... سال ...

$A(-2,k) \rightarrow k = -\frac{1}{2} \times -2 + b$

$B(4,m) \rightarrow m = -\frac{1}{2} \times 4 + b$

$S_{\square} = (\sqrt{45})(\sqrt{45}) = \boxed{45}$ (1)

$x-1 \begin{cases} m+2-b=0 \\ k-1-b=0 \\ -m-2+b=0 \end{cases}$

$\underbrace{k-m}_{\Delta y} = 3$

$AB = \sqrt{(\Delta y)^2 + (\Delta x)^2} = \sqrt{9+36} = \sqrt{45}$

$\Delta x = -2-4 = \boxed{-6}$

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(2)

$AB \parallel CD \rightsquigarrow \frac{4-1}{-1-3} = \frac{-3}{2x+1} \rightsquigarrow 2x+1=4$

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

$AB \perp BC \rightarrow \frac{-3}{4} \times \frac{y-1}{-\frac{3}{2}} = -1 \rightarrow \frac{y-1}{2} = -1$

$y = -1$

$C = (\frac{3}{2}, -1)$

$AB = \sqrt{16+9} = 5$

محیط $= 2(AB+BC) = (5+\frac{5}{2}) = 15$ $\quad BC = \sqrt{4+\frac{9}{4}} = \frac{5}{2}$ $\quad \frac{25}{4}$

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(3)

$2mx + (m^2-1)y - 3 = 0$

$m = \frac{-a}{b} = \frac{-2m}{m^2-1} = \sqrt{3}$

$\sqrt{3}m^2 - \sqrt{3} = -2m \qquad \frac{2\sqrt{3}}{3} - \frac{\sqrt{3}}{3} = \frac{\sqrt{3}}{3}$

$\sqrt{3}m^2 + 2m - \sqrt{3} = 0$

$m^2 + 2m - 3 = 0 \qquad (m-1)(m-2) = 0$

$m = \frac{1}{\sqrt{3}}, \frac{2}{\sqrt{3}}$ گویا می‌کنیم $\frac{\sqrt{3}}{3}, \frac{2\sqrt{3}}{3}$

P4PCO