Subject:
Date:

به نام خدا

تارا حسنی

۱ـ $AB=\sqrt{(4+2)^2+(m-8)^2}=\sqrt{9+36}=3\sqrt{5} \rightarrow AB^2=45$

$-\frac{1}{2}=\frac{m-2}{4+2} \rightarrow m-12=-3$

۲ـ $m_{AB}=m_{CD} \rightarrow \frac{4-1}{-1-3}=\frac{3}{-1-x-x} \rightarrow -1-2x=\frac{-4}{-3} \rightarrow x=\frac{3}{2}$

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

$AB=\sqrt{(3+1)^2+(1-4)^2}=5$

$BC=\sqrt{(3-\frac{3}{2})^2+(1+1)^2}=\sqrt{\frac{9}{4}+4}=\frac{5}{2}$ $P=(5+\frac{5}{2})\times 2=15$

۳ـ $\tan 60=\sqrt{3} \rightarrow \frac{-2m}{m^2-1}=\sqrt{3} \rightarrow \sqrt{3}m^2+2m-\sqrt{3}=0$

$|\alpha-\beta|=\frac{\sqrt{\Delta}}{|a|}=\frac{\sqrt{4+12}}{\sqrt{3}}=\frac{4\sqrt{3}}{3}$

۴- BC از A فاصله $m = \frac{11-3}{7-3} = 2$ $\quad y = 2x - 3$

$AH = \frac{|-9+2-3|}{\sqrt{5}} = \frac{10\sqrt{5}}{5} = 2\sqrt{5}$

۵- $AB \Rightarrow y = -2x + 7$, $BC \Rightarrow y = \frac{7}{2}x - \frac{19}{2}$ $\Big\} \; -2x + 7 = \frac{7}{2}x - \frac{19}{2} \rightarrow \frac{11}{2}x = \frac{33}{2} \rightarrow x = 3, \; y = 1$

AC از B فاصله $\longrightarrow \frac{|24-9-17|}{5} = \frac{22}{5} = 4/4$

۶- $x = y$ و $y = -8x - 6 \Longrightarrow x = -\frac{2}{3}, \; y = -\frac{2}{3}$

قطر $= \frac{2\sqrt{2}}{3}$

۷- $m = m' \Longrightarrow \frac{1}{a} = a \rightarrow a = \pm 1 \xrightarrow{(1,2)\ \text{نقطه}} a = 1$

$\Rightarrow \left.\begin{matrix} y = x \\ y = x + 1 \end{matrix}\right\} \xrightarrow{\text{فاصله}} \frac{1}{\sqrt{2}} \qquad \left(\frac{1}{\sqrt{2}}\right)^2 + x^2 = 5^2 \rightarrow x = \frac{7}{\sqrt{2}}$

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

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ارتفاع = طول یک ضلع ← مثلث قائم الزاویه ‎-۸

$y = \frac{1}{3}x - \frac{1}{3} \longrightarrow m' = -3 \longrightarrow y = -3x + 12$

$-3x + 12 = \frac{1}{3}x - \frac{1}{3} \longrightarrow x = \frac{37}{10} , y = \frac{9}{10} \longrightarrow S = \frac{9}{10} \times 3 \times \frac{1}{2} = \frac{27}{20}$

$\frac{a-b}{-\frac{1}{2}+\frac{1}{3}} = \sqrt{3} \longrightarrow a-b = \frac{-\sqrt{3}}{6}$ ‎-۹

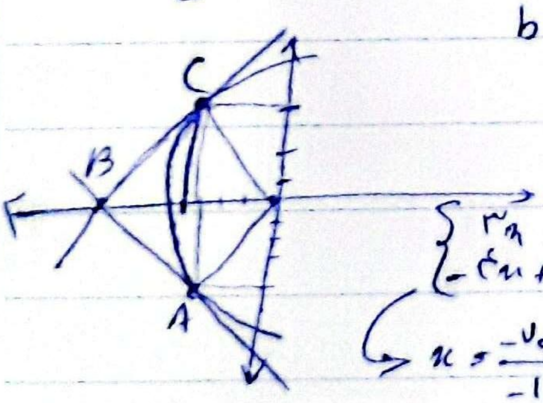
ضلع $= \sqrt{\left(-\frac{1}{2}+\frac{1}{3}\right)^2 + (b-a)^2} = \sqrt{\frac{1}{36} + \frac{3}{36}} = \frac{2}{6} = \frac{1}{3}$

$\xrightarrow{\text{قطر}} \frac{\sqrt{2}}{3}$

$r_{\text{قطر}} = 5 \qquad m_{OB} = \frac{4}{3} \longrightarrow m_{BC} = \frac{4}{3} \quad BC \to y = \frac{4}{3}x + b$ ‎-۱۰

$\frac{|3y - 4x - 3b|}{5} = 5 \longrightarrow b = \frac{25}{3}$

$b = \frac{-25}{3}$ غ ق ق $\qquad -4x + 3y - 25 \in BC$



$AD \Rightarrow y + 4 = -\frac{3}{4}(x+3)$

$\begin{cases} 3x + 4y + 25 = 0 \\ -4x + 3y - 25 = 0 \end{cases}$

$x = \frac{-75-100}{-16-9} = -7 \quad y = \frac{100-75}{-16-9} = -1 \quad xy = 7$