Subject: ( ) Date:

(۱) الف) $\left(\frac{\sqrt{۲}}{۲}-\frac{\sqrt{۲}}{۲}\right)\left(\frac{\sqrt{۲}}{۲}+\frac{\sqrt{۳}}{۲}\right)=\frac{۳}{۲}-\frac{۲}{۲}=\frac{۱}{۲}$

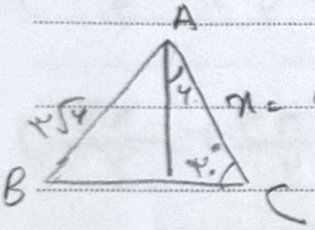
ب) $\frac{۱+۱}{۳+۱}=\frac{۲}{۴}=\frac{۱}{۲}$ صورت $\frac{\sin}{\cos}=\frac{\frac{۱}{۲}}{\frac{\sqrt{۳}}{۲}}=\frac{۱}{\sqrt{۳}}=\left(\frac{\sqrt{۳}}{۳}\right)^{۲}=$

مخرج $=\left(\frac{\sqrt{۳}}{۲}\right)^{۲}=\frac{۳}{۴}\times۴$ $\quad \frac{\sqrt{۲}}{۲}\times\frac{\sqrt{۲}}{۹}=\frac{۲}{۴}\times۲=۱$ $\quad \frac{۳}{۳}\times\frac{۴}{۴}=۱$

(۲) الف) $AH=\frac{\sqrt{۲}}{۲}\times\sqrt{۹}=\frac{\sqrt{۱۲}}{۲}=\frac{۲\sqrt{۳}}{۲}$

$(۲\sqrt{۳})^{۲}-(\sqrt{۳})^{۲}=۱۲-۳=۹\rightarrow\sqrt{۹}=۳=HC$

ب)

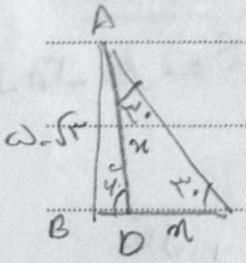


$۲(۹=\frac{\sqrt{۳}}{۲}x)\rightarrow۱۸=\sqrt{۳}x\rightarrow x=\frac{۱۸}{\sqrt{۳}}\times\frac{\sqrt{۳}}{\sqrt{۳}}=\frac{۱۸\sqrt{۳}}{۳}=۶\sqrt{۳}$

$\frac{۳\sqrt{۹}}{\frac{۱}{۲}}=\frac{۶\sqrt{۳}}{\sin B}\Rightarrow ۶\sqrt{۶}\sin B=۶\sqrt{۳}\rightarrow$

$\sin B=\frac{\sqrt{۳}}{\sqrt{۳}\times\sqrt{۲}}=\frac{\sqrt{۲}}{۲}$ $\quad B=۴۵°$

(۳) الف)



$۲(۵۰\sqrt{۳}=\frac{\sqrt{۳}}{۲}\times x)$

$۱۰۰\sqrt{۳}=\sqrt{۳}x$ $\quad x=۱۰۰$

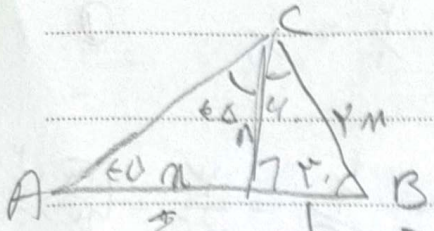
ب) $AB=۲$ $\quad DC=\sqrt{۱۳}$

$BC=\sqrt{۱۲}$ $\quad AC=۴$ $\quad \sin\alpha=\frac{\text{مقابل}}{\text{وتر}}$ $\quad \frac{۱}{\sqrt{۱۳}}\times\frac{\sqrt{۱۳}}{\sqrt{۱۳}}=\frac{\sqrt{۱۳}}{۱۳}$

Arman

Subject : ( ) Date : .....

(۳)



$x^2 + m^2 - 2xm\cos 60 \to \sqrt{3}m$

$\frac{AB}{AC} = \frac{m+\sqrt{3}m}{\sqrt{3}m} = \frac{1+\sqrt{3}}{\sqrt{3}}$

$\frac{\sqrt{3}}{2} \times 2m = \sqrt{3}m$

(۵)

$\frac{S_{ABE}}{S_{BCD}} = \frac{\frac{1}{2}\times 2\times 4\times \sin B}{\frac{1}{2}\times 9\times 2\times \sin B} = \frac{8}{18} = \frac{4}{9}$

(۶)

الف) $S_{\text{مثلث}} = \frac{1}{2}\times 3\times 4\times \sin 120^\circ = 6\times \frac{\sqrt{3}}{2} = 3\sqrt{3}$

$S_{\omega'} = 3\sqrt{3}\times 2 = 6\sqrt{3}$

ب) $\frac{1}{2}\times 3\times 4\times \sin 120^\circ \cdot \frac{\sqrt{3}}{2} = 3\sqrt{3}$

(۴)

$P\left|\frac{-1}{2}\right.$ $Q\left|\frac{3}{4}\right.$ $y = an+b$ $4 = 3a+b$

$2 = -a+b$

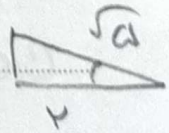
$-(3a+b-4 = 0) = -3a-b+4 =$

$\begin{cases} -3a-b+4=0 \\ -a+b-2=0 \end{cases}$

$-2a = -2$ $a = 1$ $b = 3$

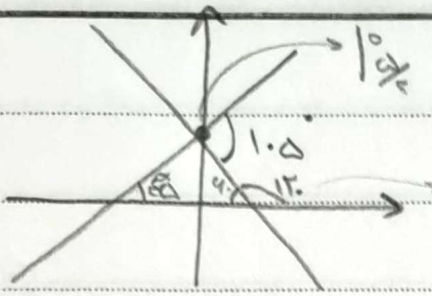
$\tan\theta = \frac{1}{2}$ (مقابل / مجاور)

$\cos = \frac{2}{\sqrt{5}}$



Arman

Subject : ( ) Date :



$y = x + \frac{a}{2} \rightarrow y = \frac{a}{2}$ (1)

$\tan 30^\circ = \frac{\sin}{\cos} = \frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}} = \frac{2\sqrt{3}}{2} = \sqrt{3} = m$

$2y = 2x + a \quad y = x + \frac{a}{2} \quad \tan\alpha = 1 \quad \alpha = 45^\circ \quad mb = \sqrt{3}\,\frac{a}{2} =$

$y = mx + b \rightarrow \frac{a}{2} = 0 + b \quad b = \frac{a}{2}$ $\qquad \frac{a\sqrt{3}}{2}$

$-\cos x + \cos x + \cot x \Rightarrow \frac{\sqrt{3}}{2} - \frac{\sqrt{3}}{2} + -\sqrt{3} = -\sqrt{3}$ (9)

$\left(\frac{14\pi}{2} + \frac{\pi}{2} + x\right) = \sin\left(\frac{\pi}{2} + x\right) = \cos x$ (4)

$\left(\frac{12\pi}{2} + \frac{2\pi}{2} - x\right) = \cos\left(2\frac{\pi}{2} - x\right) = -\sin x$

$2\pi + x = 2\pi + \pi + x = \cos(\pi + x) = -\cos x$

$2\pi - x = \sin(2\pi - x) = -\sin x$

$\frac{\cos x - \sin x}{-\cos + \sin x} = \frac{-(\sin x - \cos x)}{\sin x - \cos x} = -1$