A دهم دوره

17,75

1)

الف) $\left(\frac{\sqrt{2}}{2}-\frac{\sqrt{3}}{2}\right)\left(\frac{\sqrt{2}}{2}+\frac{\sqrt{3}}{2}\right)=\left(\frac{\sqrt{2}}{2}\right)^2-\left(\frac{\sqrt{3}}{2}\right)^2=\frac{2}{4}-\frac{3}{4}=-\frac{1}{4}$

ب) $\frac{1+3\left(\frac{\sqrt{3}}{3}\right)^2}{4\left(\frac{\sqrt{3}}{2}\right)^2+2\left(-\frac{\sqrt{2}}{2}\right)^2}=\frac{1+3\times\frac{1}{3}}{3+1}=\frac{2}{4}=\frac{1}{2}$

$4\times\frac{3}{4}+2\times\frac{2}{4}$

2)

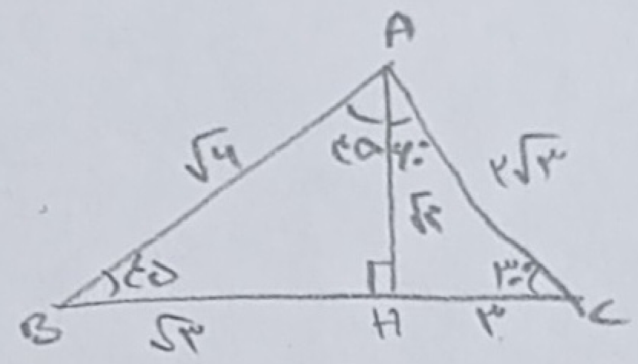
الف) $\frac{\sqrt{2}}{2}\times\sqrt{6}=\frac{\sqrt{12}}{2}=\sqrt{3}$

$2\sqrt{3}\times x=\sqrt{3}$

$x=\frac{\sqrt{3}}{2\sqrt{3}}=\frac{1}{2}$

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

$CH=3$

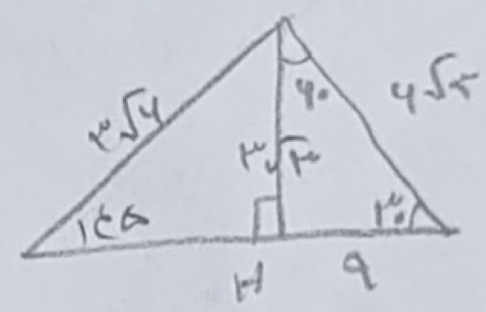


ب) $\frac{\sqrt{3}}{2}$ قطر $=9$

قطر $=\frac{9}{\frac{\sqrt{3}}{2}}=6\sqrt{3}$

$3\sqrt{6}\times x=3\sqrt{3}$

$x=\frac{3\sqrt{3}}{3\sqrt{6}}\times\frac{\sqrt{6}}{\sqrt{6}}=\frac{\sqrt{18}}{6}=\frac{3\sqrt{2}}{6}=\frac{\sqrt{2}}{2}$



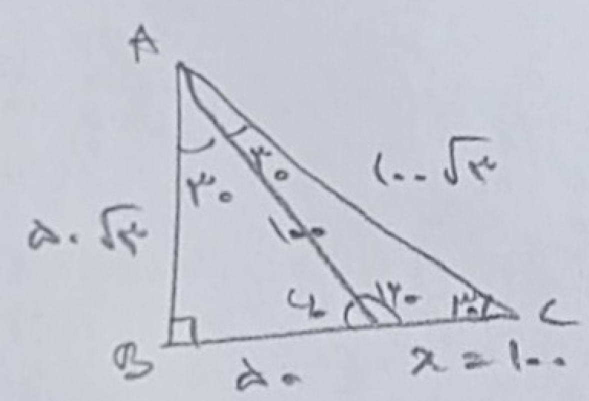
3)

$\frac{\sqrt{3}}{2}\times 100\sqrt{3}=150$

$\frac{\sqrt{3}}{2}$ قطر $=50\sqrt{3}$

قطر $=50\sqrt{3}\times\frac{2}{\sqrt{3}}=100$

$\{150-50=100=x$



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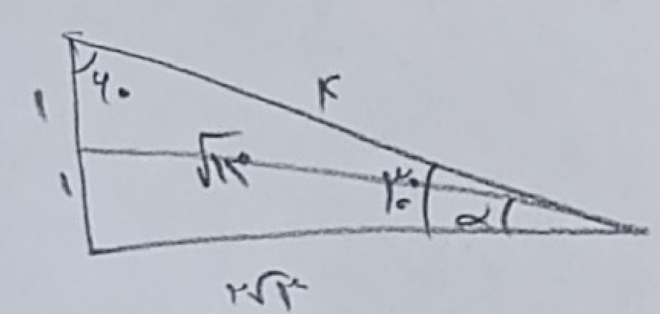
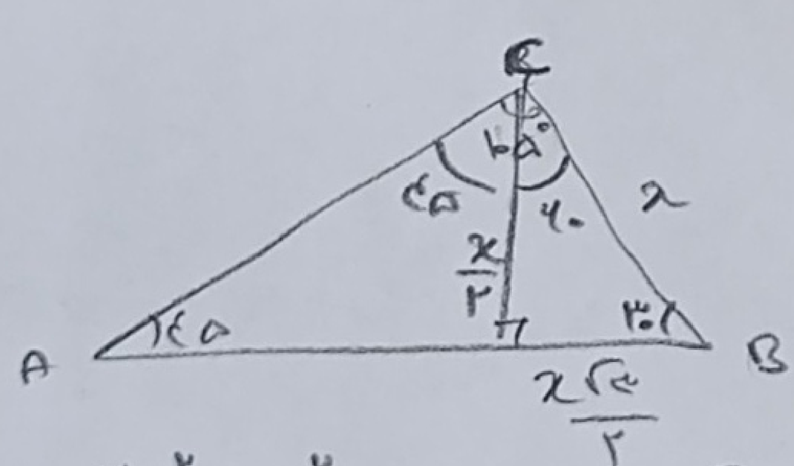


$\sqrt{1+12}=\sqrt{13}$

$\frac{\sqrt{3}}{2}\times 4=2\sqrt{3}$

$\sin=\frac{1}{\sqrt{13}}\times\frac{\sqrt{13}}{\sqrt{13}}=\frac{\sqrt{13}}{13}$

4)

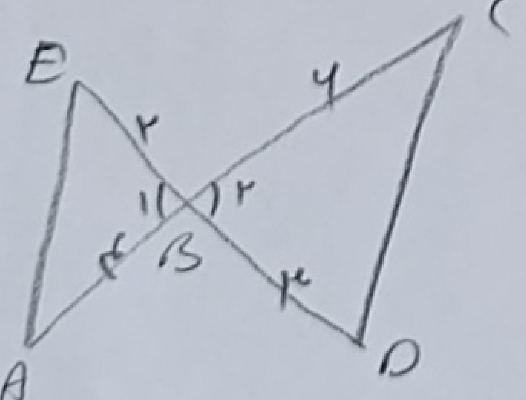


$\frac{3x^2}{4}=\frac{x^2}{2}$ $\quad AC=\frac{x\sqrt{2}}{2}$

$AC^2=BC\times AH$

$\frac{AB}{AC}=\frac{\frac{x(1+\sqrt{3})}{2}}{\frac{x}{\sqrt{2}}}=\frac{(1+\sqrt{3})\sqrt{2}}{2}$

5)



$\frac{1}{2}ab\sin\alpha$

$\frac{S_{\hat{ABE}}}{S_{\hat{BCD}}}=\frac{\frac{1}{2}\times 2\times 4\times \sin B_1}{\frac{1}{2}\times 6\times 3\times \sin B_2}=\frac{8}{18}=\frac{4}{9}$

$B_1=B_2$

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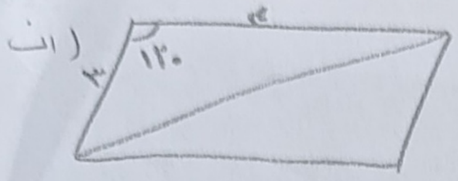
الف)

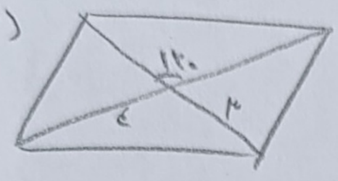


$\frac{1}{2}ab\sin\alpha$

$= \frac{1}{2} \times 4 \times 4 \times \frac{\sqrt{3}}{2} = 4\sqrt{3}$

$4\sqrt{3} \times 2 = 4\sqrt{3}$

ب)



$\frac{1}{2}ab\sin\alpha = \frac{1}{2} \times 4 \times 4 \times \frac{\sqrt{3}}{2} = 4\sqrt{3}$

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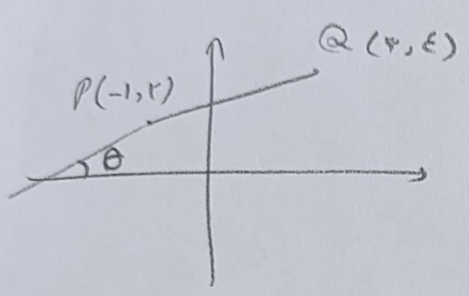

$\frac{4-2}{3+1} = \frac{1}{2}$

$\tan\theta = \frac{1}{2}$

$\tan^2\theta + 1 = \frac{1}{\cos^2\theta}$

$\frac{1}{4} + \frac{1}{4} = \frac{5}{4} = \frac{1}{\cos^2\theta}$

$\cos^2\theta = \frac{4}{5}$ $\quad \cos\theta = \frac{2\sqrt{5}}{5}$

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$\tan_{120} = \sqrt{3}$

$y = x + \frac{5}{2}$

$\tan\theta = 1$ $\quad \theta = 45^\circ$

$m = \sqrt{3}$ $\quad b = \frac{5}{2}$

$y = \sqrt{3}x + \frac{5}{2}$

$mb = \frac{5}{2} \times \sqrt{3} = \frac{5\sqrt{3}}{2}$

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$\frac{-\cos x + \cos x + \cot x}{\cot\left(\frac{5\pi}{4}\right)}$

$\hookrightarrow = \frac{\sqrt{3}}{3}$

$\cot\left(\frac{17\pi}{4}\right) = -\sqrt{3}$ ۱۱/۵

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

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$\sin x + \sin 90^\circ$ $\quad \cos(-x) = \cos x$

$\frac{\sin(90^\circ + x) + \cos(270^\circ - x)}{\cos(180^\circ + x) - \sin(270^\circ - x)} = \frac{1 + \sin(x) + 0 + \cos(x)}{-1 + \cos(x) - 0 + (\sin(x))} = \frac{\cos x + \sin x + 1}{\cos x + \sin x - 1}$ ۰

$\cos 180^\circ + \cos x$ $\quad \sin(-x) = -\sin x$

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

$\sin\left(\frac{17\pi}{2} + x\right) = \cos x$

$\cos\left(\frac{17\pi}{2} - x\right) = -\sin x$

$\cos(3\pi + x) = -\cos x$

$\sin(4\pi - x) = -\sin x$