سری ۱۴ پاسخ سری دهم دفتر B

$$\frac{D}{180}=\frac{G}{200}=\frac{Rad}{\pi}$$

۱)

الف) $\frac{240}{180}=\frac{Rad}{\pi}\Rightarrow 3\,rad=4\pi\rightarrow rad=\frac{4\pi}{3}$

ب) $\frac{\cancel{125}^{25}}{\cancel{180}_{36}}=\frac{Rad}{\pi}\Rightarrow 36\,rad=25\pi\rightarrow rad=\frac{25\pi}{36}$

ج) $\frac{\frac{5\pi}{12}}{\pi}=\frac{D}{180}\rightarrow 180(5)=D\times 12\rightarrow D=75^\circ$

د) $\frac{\frac{4\pi}{9}}{\pi}=\frac{D}{180}\rightarrow\frac{4}{9}=\frac{D}{\cancel{180}_{20}}\rightarrow D=80^\circ$

۲)

$\frac{\frac{125a}{9}}{200}=\frac{D}{180}\rightarrow 180D=18(125)a$, $D=12{,}5a^\circ$

$\frac{\frac{a\pi}{\pi}}{\pi}=\frac{D}{180}$, $D=32{,}5a^\circ$

$32{,}5a^\circ+12{,}5a^\circ+10a^\circ=180^\circ\rightarrow 45a^\circ=180\rightarrow a=4$

۳)

الف) $\frac{1}{2}\times\frac{\sqrt{3}}{2}-\frac{\sqrt{3}}{2}\times\frac{1}{2}-1+2=1$

ب) $\frac{(\frac{1}{\sqrt{2}})^2+1+(\sqrt{3})^2}{\sqrt{3}-\frac{1}{\sqrt{3}}}=\frac{\frac{1}{4}+1+3}{\frac{3-1}{\sqrt{3}}}=\frac{\frac{13}{4}}{\frac{2}{\sqrt{3}}}=\frac{13\sqrt{3}}{8}$

۴)

$-\frac{1}{2}\times\frac{1}{2}+\frac{\sqrt{3}}{2}\times\frac{\sqrt{3}}{2}=-\frac{1}{4}+\frac{3}{4}=\frac{2}{4}=\frac{1}{2}\rightarrow\sin^2\theta$

$\tan\theta?\rightarrow 1+\cot^2=\frac{1}{\sin^2\theta}\rightarrow 1+\cot^2\theta=\frac{1}{\frac{1}{2}}=2$

$\cot^2\theta=1$

علامت $\cot\theta=1$

$\rightarrow\tan\theta=1$

۵)

$$\frac{۲\left(\frac{۱}{\sqrt{۳}}\right)\left(۱-\frac{۱}{۳}\right)}{\left(۱-\frac{۱}{۳}\right)^{۲}}=\frac{\frac{۴}{۳\sqrt{۳}}}{\frac{۴}{۹}}=\frac{۹}{۳\sqrt{۳}}=\frac{۳}{\sqrt{۳}}=\sqrt{۳}$$

$$\frac{\pi}{۳}=۶۰^{\circ}=\theta \longleftarrow \tan\theta$$

$$\frac{۶۰}{\cancel{۱۸۰}_{۳}}=\frac{Rad}{\pi} \longrightarrow \pi=۳Rad \longrightarrow Rad=\frac{\pi}{۳}$$

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۶)

$$۱+\tan^{۲}\theta=\frac{۱}{\cos^{۲}\theta} \longrightarrow \cos^{۲}\theta=\frac{۱}{۲۶} \longrightarrow \cos\theta=\frac{\pm۱}{\sqrt{۲۶}}$$

$$\cos^{۲}\theta+\sin^{۲}\theta=۱ \longrightarrow \sin^{۲}\theta=\frac{۲۵}{۲۶} \longrightarrow \sin\theta=\frac{\pm۵}{\sqrt{۲۶}}$$

$$\frac{\frac{۱۵}{\sqrt{۲۶}}-\frac{۱}{\sqrt{۲۶}}}{\frac{۵}{\sqrt{۲۶}}-\frac{۴}{\sqrt{۲۶}}}=\frac{\frac{۱۴}{\cancel{\sqrt{۲۶}}}}{\frac{۱}{\cancel{\sqrt{۲۶}}}}=\boxed{۱۴}$$

چون $\tan$ (+) پس $\cos$ و
+ مورد
هم $\sin$
− مورد

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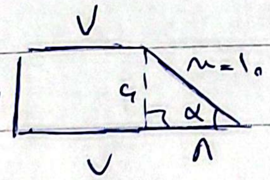
۷)



$$\sin\alpha=\frac{۶}{۱۰}$$

$$\sin=\frac{\text{مقابل}}{\text{وتر}} \Rightarrow \frac{۶}{\text{وتر}}=\frac{۶}{۱۰} \longrightarrow \boxed{\text{وتر}=۱۰}$$

$$۱۰^{۲}-۶^{۲}=۶۴ \longrightarrow \sqrt{۶۴}=۸$$

$$\text{محیط}=۷+۷+۸+۶+۱۰=\boxed{۳۸}$$

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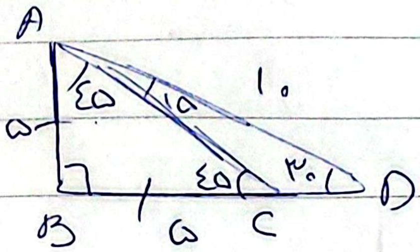
۸)



$$\sin\hat{D}=\frac{x}{۱۰}=\frac{۱}{۲} \rightarrow \boxed{x=۵}$$

$$۱۰^{۲}-۵^{۲}=BD^{۲} \longrightarrow ۷۵ \longrightarrow BD=\sqrt{۷۵}$$

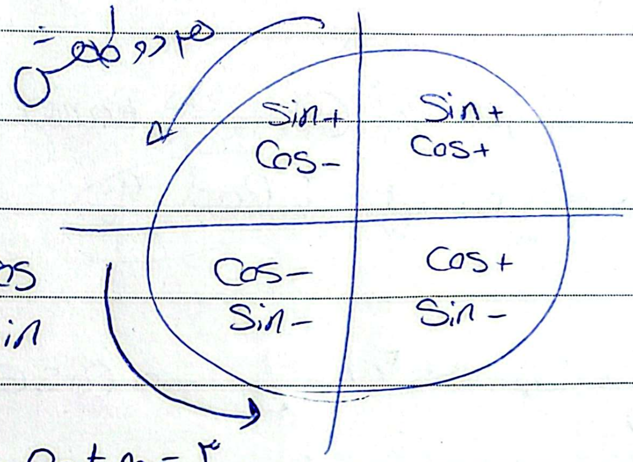
$$CD=BD-BC$$

$$\sqrt{۷۵}-۵$$

$$۵(\sqrt{۳}-۱) \longleftarrow$$

۹) الف) سوم

ب) دوم



↑ در حال cos

↓ sin

$\tan = \frac{1}{3} \longrightarrow \cot \alpha = 3$

۱۰)

$1 + \cot \alpha^2 = \frac{1}{\sin \alpha^2}$ $1 + 9 = \frac{1}{\sin \alpha^2} \longrightarrow \sin \alpha^2 = \frac{1}{10}$

$\sin \alpha = \frac{\pm 1}{\sqrt{10}}$

$\sin \alpha = \frac{-1}{\sqrt{10}} \longleftarrow$ ق ق −