نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ...۱.۲... کلاس .....

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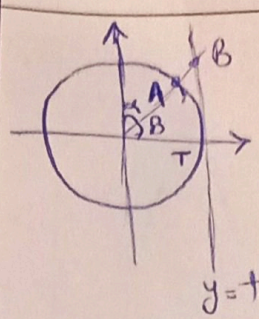


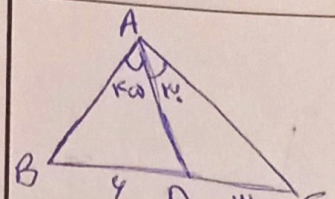
$\alpha+B=90^\circ$

$\tan B=\cot\alpha=BT$

$OBT\rightarrow$ رابطه فیثاغورس $\Rightarrow OB^2=1+\cot^2\alpha=\frac{1}{\sin^2\alpha}$

$\Rightarrow OB=\left|\frac{1}{\sin\alpha}\right|=\frac{1}{\sin\alpha}$ ($\sin\alpha>0$) $\Rightarrow AB=\frac{1}{\sin\alpha}-1=\frac{1-\sin\alpha}{\sin\alpha}$

۲



$\frac{S_{ABD}}{S_{ADC}}=\frac{\frac{1}{2}\times BD\times \text{ارتفاع}}{\frac{1}{2}\times CD\times \text{ارتفاع}}=\frac{BD}{CD}=\sqrt{2}$

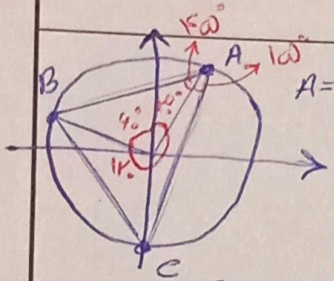
$\frac{\sqrt{2}}{2}$

$\frac{S_{ABD}}{S_{ADC}}=2=\frac{\frac{1}{2}\times AB\times AD\times \sin 45^\circ}{\frac{1}{2}\times AC\times AD\times \sin 30^\circ}\Rightarrow 2=\frac{AB}{AC}\times\sqrt{2}\Rightarrow$

$\frac{1}{2}$

$\frac{AB}{AC}=\sqrt{2}$

۳



$A=60^\circ$

الف) $S=\frac{1}{2}AB\times AC\times\sin 60^\circ=\frac{1}{2}\times\sqrt{2}\times\sqrt{2+\sqrt{3}}\times\frac{\sqrt{3}}{2}$

$\frac{\sqrt{12+4\sqrt{3}}}{4}=\frac{|2\sqrt{3}+\sqrt{3}|}{4}=\frac{3+\sqrt{3}}{4}$

$AB=\sqrt{1+1}=\sqrt{2}$ ، $BC=\sqrt{1+1-2\times1\times(-\frac{1}{2})}=\sqrt{3}$

ب) $AC=\sqrt{1+1-2\times1\times(\frac{-\sqrt{2}}{2})}=\sqrt{2+\sqrt{2}}$ محیط: $\sqrt{2}+\sqrt{3}+\sqrt{2+\sqrt{2}}$

$A_1=\frac{180-90}{2}=45^\circ$

$A_2=\frac{180-120}{2}=15^\circ$

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$2m^2-m^2-\sin^2\alpha(2\sin^2\alpha-1)$ $\quad m-\cos m=0\Rightarrow m=\cos m$

$2\cos^2\alpha-\cos^2\alpha-\sin^2\alpha(2\sin^2\alpha-1)$

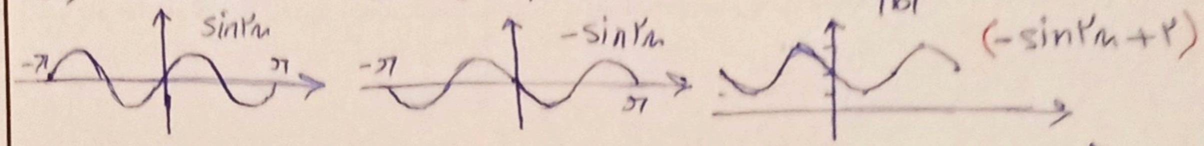
$\cos^2\alpha-\sin^2\alpha=\cos 2\alpha$ ↘ $1-2\sin^2\alpha=\cos 2\alpha$ ، ↗ $2\cos^2\alpha-1=\cos 2\alpha$

$\cos^2\alpha(2\cos^2\alpha-1)-\sin^2\alpha(2\sin^2\alpha-1)$

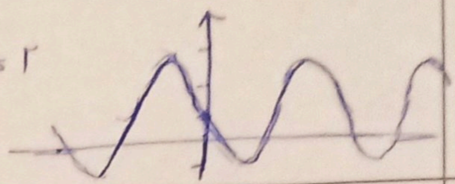
$\cos^2\alpha(\cos 2\alpha)-\sin^2\alpha(-\cos 2\alpha)=\cos 2\alpha\underbrace{(\cos^2\alpha+\sin^2\alpha)}_{1}=1$

$\cos 2\alpha=1$ $\quad \sin^2 2\alpha+\underbrace{\cos^2 2\alpha}_{1}=1\Rightarrow\sin 2\alpha=0$

الف) $-2\sin x\cos x+2$ $[-\pi,\pi]$ $\Rightarrow -\sin 2x+2$ $T=\frac{2\pi}{|b|}=\frac{2\pi}{2}=\pi$ ۶

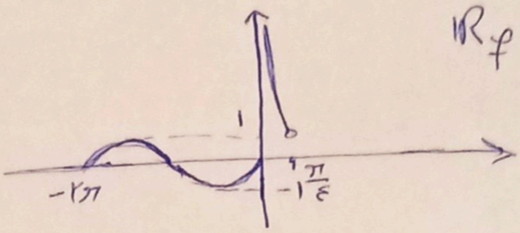


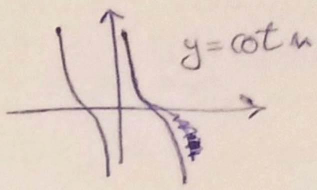
ب) $2\cos(\pi x+\frac{\pi}{2})+1$ $[-\pi,2\pi]$ $T=\frac{2\pi}{|b|}=\frac{2\pi}{\pi}=2$



$f(x)\begin{cases}\cot x & 0<x<\frac{\pi}{4}\\ \sin x & x\leq 0\end{cases}$ $R_f=[-1,+\infty)$ ۷

$\cot\frac{\pi}{4}=1$





$f(x)=a+b\underbrace{\sin\alpha\cos\alpha}_{\frac{1}{2}\sin 2\alpha}\cos(2\alpha)$ $cx=\alpha$ $\Rightarrow a+b\times\frac{1}{4}\sin 4\alpha$ ۸

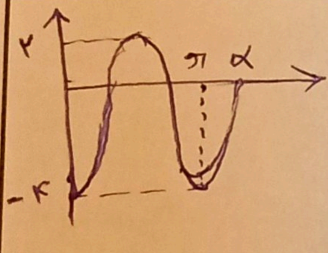
$\frac{1}{2}\sin 4\alpha$ $a+\frac{b}{4}\sin 4cx$

$\left|\frac{b}{4}\right|+a=4$ (max)

$-\left|\frac{b}{4}\right|+a=0$ (min) $\Rightarrow\begin{cases}a=2\\ b=8\end{cases}$

$T=\frac{\pi}{2}-\frac{\pi}{10}=\frac{2\pi}{5}=\frac{2\pi}{4c}\Rightarrow c=\frac{5}{4}$

$\frac{bc}{a}=\frac{8\times\frac{5}{4}}{2}=\boxed{5}$



$f(x)=a\cos bx+c$ علامت a به دلیل قرینه شدن نمودار است. ۹

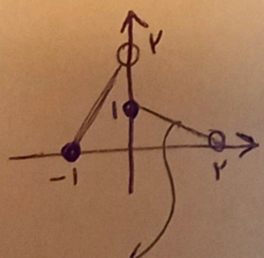
$|a|+c=max=2$

$-|a|+c=min=-4$ $\Rightarrow c=-1,\ a=-3$

$T=\pi=\frac{2\pi}{|b|}\Rightarrow b=2$ $-3\cos 2x-1=f(x)$

$x=\alpha\Rightarrow -3\cos 2\alpha-1=0\Rightarrow\cos 2\alpha=-\frac{1}{3}$ $1+\tan^2 2\alpha=\frac{1}{\cos^2 2\alpha}$

$1+\tan^2 2\alpha=9\Rightarrow|\tan 2\alpha|=\sqrt{8}$



$T=3$ $f(-34{,}5)=?$ ۱۰

$-34{,}5+1=-33{,}5=\underbrace{-3\times 11}-0{,}5$

۱۱ دوره تناوب کامل

$f(-34{,}5)=f(1{,}5)=0{,}25$

$y=-\frac{1}{2}x+1$

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