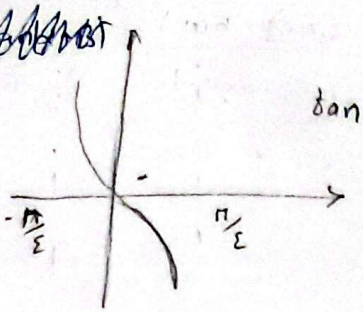
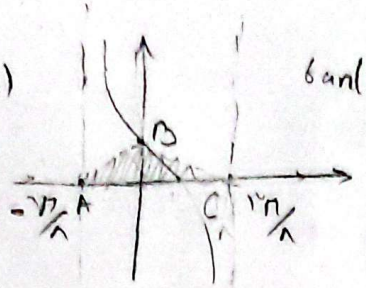
نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۱۸ کلاس دوازدهم .....

۱



$\tan(-2\pi)$



$\tan(-2\pi+\frac{\pi}{4}) \Rightarrow AC=\frac{\pi}{4}$

$\Rightarrow \frac{\pi}{4}\times 1\times \frac{1}{2}=\frac{\pi}{8}$

۲

۳

$\log_{\frac{1}{2}}\frac{\sin\alpha}{-\cos\alpha}=\log 2 \Rightarrow \frac{\sin\alpha}{-\cos\alpha}=2 \Rightarrow -\tan\alpha=2 \Rightarrow \tan\alpha=-2$

$\frac{2\tan\alpha}{1+\tan^2\alpha}-\frac{1-\tan^2\alpha}{1+\tan^2\alpha}=\frac{\tan^2\alpha+2\tan\alpha-1}{1+\tan^2\alpha}=\frac{4-4-1}{1+4}=\frac{-1}{5}$

۴

$\sin^2\alpha+\cos^2\alpha=1 \Rightarrow \sin^2\alpha(\sin^2\alpha-1)=-\frac{1}{6} \Rightarrow \sin^2\alpha\cos^2\alpha=\frac{1}{6}$

$\cos^2\frac{\alpha}{2}-\sin^2\frac{\alpha}{2}=x \Rightarrow \cos^2\frac{\alpha}{2}\left(1-\sin^2\frac{\alpha}{2}\right)=x-1 \Rightarrow \sin^2\frac{\alpha}{2}\cos^2\frac{\alpha}{2}=1-x$

$\Rightarrow x-1=-\frac{1}{6} \Rightarrow x=\frac{5}{6}$

۵

$\frac{\sin(\pi+\alpha)}{2(1-\cos^2\alpha)}<0 \Rightarrow \begin{cases} 2(\sin^2\alpha)>0 \\ \pi+\alpha>0 \\ \sin\alpha<0 \end{cases}$ سینوس منفی

$\sin\alpha<0$ ، $\cos\alpha<0$ ناحیه سوم

$\sin\tan-\frac{1}{\cos\alpha}=\frac{\sin^2\alpha}{\cos\alpha}-\frac{1}{\cos\alpha}=\frac{\sin^2\alpha-1}{\cos\alpha} \Rightarrow \frac{-\cos^2\alpha}{\cos\alpha}<0 \Rightarrow -\cos\alpha>0$ سینوس منفی

$\frac{2}{\sin x} = -\frac{2}{\cos x} \Rightarrow 2\cos x = -2\sin x \Rightarrow \frac{\sin x}{\cos x} = -\frac{1}{2} \Rightarrow \tan x$ $\Rightarrow \cot = \frac{1}{\tan} = -\frac{4}{3} \Rightarrow \tan + \cot = -\frac{1}{2} + -\frac{3}{2} = \frac{-1-3}{2}$ $(\frac{-\pi}{4})$	۶
	۷
$\therefore -2\sin^2 \cos^2 - \sin^2 \cos^2 \alpha = \cos 10^\circ$, $2\cos^2 - 1 \cdot \cos^2 - \sin^2 \cos(2\alpha) = \cos 20^\circ$ $\frac{-\tan^2}{1+\tan^2} \cdot \cos(2\alpha) \cdot \cos 20^\circ \Rightarrow (\cos 10^\circ)(\cos 20^\circ)(\cos 20^\circ)$ $\alpha = 10^\circ$ $\Rightarrow \boxed{\cos(\alpha)\cos(2\alpha)\cos(4\alpha)}$	۸
	۹
	۱۰