نام و نام خانوادگی ......تینا ایرانی........ پاسخنامه تشریحی تکلیف شماره ...۲۸... کلاس ....A........

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$\cot a = \frac{\cos a}{\sqrt{1-\cos^2\alpha}}$

$\frac{1}{\sqrt{\cos^2\alpha}} - \frac{1}{\cot a} = \frac{1-\sin a}{|\cos a|} \Rightarrow \frac{1}{|\cos a|} - \tan a = \frac{1}{|\cos a|} - \frac{\sin a}{\cos a} = \frac{1-\sin a}{|\cos a|} \rightarrow$ باید + باشد

ناحیه اول یا چهارم باشه

$\frac{\cos a}{\sqrt{1-\cos^2\alpha}} = \frac{\cos\alpha}{\sqrt{\sin^2\alpha}} = \frac{\cos\alpha}{|\sin\alpha|} \rightarrow \cos\alpha > 0 \rightarrow$ ناحیه اول

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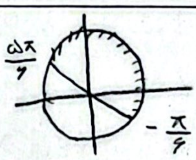
$-\frac{\pi}{12} < x < \frac{5\pi}{12} \rightarrow -\frac{\pi}{6} < 2x < \frac{5\pi}{6}$



$\sin 2\alpha = \frac{m-1}{4}$

$\Rightarrow -\frac{1}{2} < \frac{m-1}{4} \leq 1 \longrightarrow -2 < m-1 \leq 4 \Rightarrow \boxed{-1 < m \leq 5}$

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$\tan x + \cot x = -3 \rightarrow \frac{\sin x}{\cos x} + \frac{\cos x}{\sin x} = -3 \rightarrow \frac{\sin^2 x + \cos^2 x}{\sin x \cos x} = -3 \rightarrow \sin x \cos x = -\frac{1}{3}$

$3\pi < 4x < 4\pi \rightarrow \frac{3}{4}\pi < x < \pi$

$\frac{1}{\sin^3 x + \cos^3 x} = ? \rightarrow \frac{1}{(\sin x + \cos x)\underbrace{(\sin^2 x - \sin x\cos x + \cos^2 x)}_{1+\frac{1}{3}}} \Rightarrow \frac{1}{\frac{4}{3}(\sin x + \cos x)} = \frac{-3\sqrt{3}}{4}$

$\Rightarrow (\sin x + \cos x)^2 = \sin^2 x + \cos^2 x + 2\sin x\cos x = \frac{1}{3} \Rightarrow \sin x + \cos x = \pm\frac{1}{\sqrt{3}} \rightarrow -\frac{1}{\sqrt{3}}$

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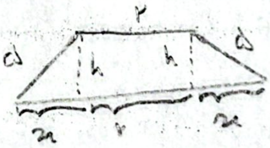
$\cos A = 0.6$



$\frac{x}{5} = \frac{6}{10} \rightarrow \boxed{x = 3} \longrightarrow 25 = x^2 + 9 \longrightarrow x = 4$

$S = \frac{(2+8)\times 4}{2} = 20$

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$\tan(285)\underbrace{\tan(-165)}_{-\tan 165} - \underbrace{\sin(1095)}_{3\times 360 + 15}\cos(255)$

$\Rightarrow \tan(270+15)(-\tan(180-15)) - (\sin 15)\cos(270-15)$

$\Rightarrow (-\cot 15)(\tan 15) - (\sin 15)(-\sin(15))$

$\Rightarrow -1 + \sin^2 15 = -\cos^2(15) \Rightarrow \boxed{k = -1}$

$A=\sqrt{3}\cos(210)\sin(240)-\sqrt{2}\sin(135)\cos(120)$

$\cos(270)=?$

$\hookrightarrow \sqrt{3}\times-\frac{\sqrt{3}}{2}\times\sin\left(\frac{3\pi}{2}-270\right)-\sqrt{2}\left(\frac{\sqrt{2}}{2}\right)\times(\cos\pi-270)$

$\hookrightarrow \frac{-3}{2}\times-\cos270-1\times(-\cos270)=\frac{3\cos270^\circ}{2}+\cos270$

$\Rightarrow \frac{\cos270\sqrt{\left(\frac{3}{2}+1\right)}}{\cos270}=\frac{\sqrt{5}}{2}$ ۶

$F(x)=16\cos^2(3x)\cos^2(9x)\cos^2(12x)\cos^2(24x)$

$F\left(\frac{\pi}{24}\right)=?\rightarrow 16\cos^2\frac{\pi}{12}\cos^2\frac{\pi}{6}\cos^2\frac{\pi}{3}\cos^2\frac{2\pi}{2}$

$\Rightarrow 16\left(\frac{1+\cos\frac{\pi}{6}}{2}\right)\left(\frac{\sqrt{3}}{2}\right)^2\left(\frac{1}{2}\right)^2\left(-\frac{1}{2}\right)^2=8\left(1+\frac{\sqrt{3}}{2}\right)\times\frac{3}{4}\times\frac{1}{4}\times\frac{1}{4}=\frac{9+3\sqrt{3}}{16}$ ۷

$\frac{1-\sin x}{1+\sin x}=4\Rightarrow 1-\sin x=4+4\sin x\Rightarrow 5\sin x=-3\Rightarrow \sin x=-\frac{3}{5}$

$\tan\frac{x}{2}=?$

$\sin2\theta=\frac{2\tan\theta}{1+\tan^2\theta}\rightarrow \sin x=\frac{2\tan\frac{x}{2}}{1+\tan^2\frac{x}{2}}=-\frac{3}{5}\Rightarrow 10\tan\frac{x}{2}=-6-6\tan^2\frac{x}{2}$

$\rightarrow 3\tan^2\frac{x}{2}+10\tan\frac{x}{2}+3=0\Rightarrow(3\tan\frac{x}{2}+1)(\tan\frac{x}{2}+3)=0$

$\rightarrow \tan\frac{x}{2}=-\frac{1}{3}$ ✗

$\rightarrow \tan\frac{x}{2}=-3$ ✓ ۸

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

$\Rightarrow \frac{\cos\frac{\theta}{2}}{\sin\frac{\theta}{2}}+\frac{\cos\frac{\theta}{2}}{\sin\frac{\theta}{2}}=\cot\frac{\theta}{2}+\cot\frac{\theta}{2}=2\cot\frac{\theta}{2}\rightarrow k=2$ ۹

$\sin\alpha=\frac{\sqrt{2}}{10}\rightarrow$ 

$\alpha\rightarrow 100=2+a^2\rightarrow a=\sqrt{98}=7\sqrt{2}\rightarrow\cos\alpha=\frac{-7\sqrt{2}}{10}$

$\cos\left(\frac{11\pi}{4}+\alpha\right)$

$\hookrightarrow 2\pi+\frac{3\pi}{4}+\alpha\rightarrow\cos\left(\frac{3\pi}{4}+\alpha\right)=\cos\frac{3\pi}{4}\cos\alpha-\sin\alpha\sin\frac{3\pi}{4}$

$\Rightarrow -\frac{\sqrt{2}}{2}\times\frac{-7\sqrt{2}}{10}-\frac{\sqrt{2}}{10}\times\frac{\sqrt{2}}{2}=+\frac{7}{10}-\frac{1}{10}=\frac{6}{10}$ ۱۰