نام و نام خانوادگی .... پاسخنامه تشریحی تکلیف شماره ۲۸ ... کلاس یازدهم دختران گروه B

۱۷/۵

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1) $\frac{1}{\sqrt{\cos^2\alpha}} - \frac{1}{\cot\alpha} = \frac{1-\sin\alpha}{|\cos\alpha|}$ ، 2) $\cot\alpha = \frac{\cos\alpha}{\sqrt{1-\cos^2\alpha}} = \frac{\cos\alpha}{|\sin\alpha|}$

$\frac{1}{\sqrt{\cos^2\alpha}} \to \frac{1}{|\cos\alpha|}$ ، $\frac{1}{\cot\alpha} \to \tan\alpha$

1) $\sin\alpha = 0 \xrightarrow{\text{معادله } 2}$ غ ق ق

2) $\sin\alpha \neq 0 \xrightarrow{\text{معادله } 1} \cos\alpha > 0$

ناحیه ۱ یا ۴

$\left(\frac{1}{|\cos\alpha|} - \frac{\sin\alpha}{\cos\alpha} = \frac{1-\sin\alpha}{|\cos\alpha|}\right) \times |\cos\alpha| \Rightarrow 1 - \frac{|\cos\alpha|}{\cos\alpha} \times \sin\alpha = 1 - \sin\alpha$

1) $\cos\alpha > 0 \Rightarrow |\cos\alpha| = \cos\alpha$ یا $\sin\alpha$

2) $\cos\alpha < 0 \Rightarrow |\cos\alpha| = -\cos\alpha$ یا $-\sin\alpha$

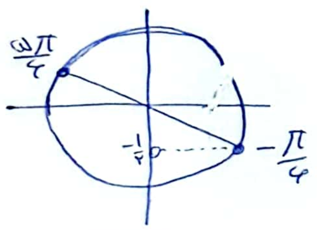
(۱)

۲

$\sin 2x = \frac{m-1}{4}$ ، $-\frac{\pi}{12} < x < \frac{5\pi}{12}$

$\to -\frac{\pi}{6} < 2x < \frac{5\pi}{6}$ ($2x = \alpha$)

مجموعه مقادیر m؟ $m \in (-1, 5]$



$-\frac{1}{2} < \sin\alpha \le 1$

$\sin\alpha = \frac{m-1}{4} \Rightarrow \left(-\frac{1}{2} < \frac{m-1}{4} \le 1\right) \times 4$

$-2 < m-1 \le 4 \xrightarrow{+1} -1 < m \le 5$

(۲)

۳

$\frac{1}{\sin^3 x + \cos^3 x} = ?$ ، $3\pi < 4x < 4\pi$ ، $\tan x + \cot x = -3$

$\to (\sin x + \cos x)(\sin^2 x + \cos^2 x - \sin x \cos x)$ ($\sin^2 x+\cos^2 x = 1$ ، $\sin x\cos x = -\frac{1}{3}$)

(۲)

$\frac{\sin x}{\cos x} + \frac{\cos x}{\sin x} = \frac{\sin^2 x + \cos^2 x}{\sin x \cos x} = \frac{1}{\sin x \cos x} = -3$ ، $\to (\sin x + \cos x) \times \frac{4}{3}$

$(\sin x + \cos x)^2 = \sin^2 x + \cos^2 x + 2\left(-\frac{1}{3}\right) = \frac{1}{3}$

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

$\sin x + \cos x < 0 \xrightarrow{\text{جذر}} -\frac{1}{\sqrt{3}} \Rightarrow -\frac{1}{\sqrt{3}} \times \frac{4}{3} = -\frac{4}{3\sqrt{3}} \xrightarrow{\text{گویا}} -\frac{3}{4}\sqrt{3}$

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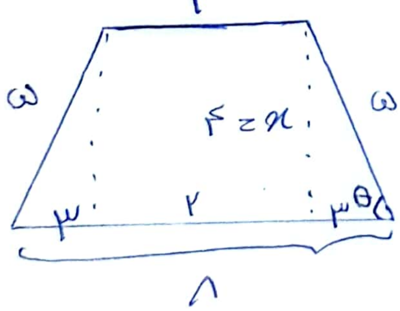

$5^2 = 3^2 + x^2$

$\cos\theta = 0/6$

$\sin\theta = 0/8 \Rightarrow 5 \times 0/6 = 3$

قاعده بزرگ $= 2 + 2 \times 3 = 8$

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

(۲)

۵

$\tan(285)\tan(-165) - \sin(1095)\cos(255) = k\cos^2 15$ ، $k = ?$ -1

(۲)

$\tan(270+15) = -\cot 15°$

$\tan(-180+15) = \tan 15°$

$\sin(1080+15) = \sin 15°$ (6×180)

$\sin(270-15) = -\sin 15°$

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

$-1 + \sin^2 15 = k\cos^2 15$ ، $k = -1$

$A=\sqrt{3}\cos(210^\circ)\sin(243)-\sqrt{2}\sin(135^\circ)\cos(153^\circ)=k\cos(27^\circ)$ $k=?$ $-\cos(180-210)=-\cos 30=-\frac{\sqrt{3}}{2}$ $A=\frac{5}{2}\cos 27^\circ$ $\frac{5}{2}$ $\sin(180-135)=\sin 45=\frac{\sqrt{2}}{2}$ $\sin(243-180)=-\sin 63 \Rightarrow \cos(90-63)=\cos 27$ $-\cos(180-153)=-\cos 27$	۱)	۶
$f(x)=16\cos^2(3x)\cos^2(6x)\cos^2(12x)\cos^2(24x) \Longrightarrow f(\frac{\pi}{36})=?$ $3\times\frac{\pi}{36}=\frac{\pi}{12}$, $6\times\frac{\pi}{36}=\frac{\pi}{6}$, $12\times\frac{\pi}{36}=\frac{\pi}{3}$, $24\times\frac{\pi}{36}=\frac{2\pi}{3}$ $\cos^2(\frac{\theta}{2})=\frac{1+\cos\theta}{2}$ $\cos^2(\frac{\pi}{12})=\frac{1+\cos\frac{\pi}{6}}{2}=(\frac{2+\sqrt{3}}{4})(\frac{\sqrt{3}}{2})^2(\frac{1}{2})^2(-\frac{1}{2})^2 \Longrightarrow \frac{6+3\sqrt{3}}{16}$ ادامه از اینجا — بعد از ساده سازی — در نهایت	۱)	۷
$\tan\frac{x}{2}=?$ $\frac{1-\sin x}{1+\sin x}=4$ و x ربع سوم $\frac{\pi}{2}<\frac{x}{2}<\frac{3\pi}{4}$ $\frac{1-\cos x}{\sin x}=\tan\frac{x}{2}$ $1-\sin x=4+4\sin x \Rightarrow -3=5\sin x$, $\sin x=-\frac{3}{5}$ $\sin^2 x+\cos^2 x=1 \Rightarrow \frac{9}{25}+\cos^2 x=1 \Rightarrow \cos x=\pm\frac{4}{5}$ ربع سوم ق‌ق $\frac{-\frac{3}{5}}{1+(-\frac{4}{5})}=-3$	۱)	۸
$\frac{\sin\theta}{1-\cos\theta}+\frac{1+\cos\theta}{\sin\theta}=k\cot\frac{\theta}{2}$ $k=?$ ۲ $\frac{\sin\theta}{1-\cos\theta}=\frac{1-\cos\theta}{\sin\theta}=\tan\frac{\theta}{2}$ عکس $\cot\frac{\theta}{2}+\cot\frac{\theta}{2}=2\cot\frac{\theta}{2}$	۱)	۹
$\cos(\frac{11\pi}{4}+\alpha)=?$ $\sin\alpha=\frac{\sqrt{2}}{10}$ و $\alpha \Rightarrow$ در ربع دوم دایره $\sin^2\alpha+\cos^2\alpha=1 \Rightarrow \frac{2}{100}+\cos^2\alpha=1 \Rightarrow \cos\alpha=\sqrt{\frac{98}{100}}=\pm\frac{7\sqrt{2}}{10}$ ق‌ق ناحیه ۲ cos منفی $\cos(2\pi+\frac{3\pi}{4}+\alpha)=\cos(\frac{3\pi}{4})\cos\alpha-\sin(\frac{3\pi}{4})\sin\alpha$ $\Rightarrow(-\frac{\sqrt{2}}{2})(-\frac{7\sqrt{2}}{10})-(\frac{\sqrt{2}}{10})(\frac{\sqrt{2}}{2})=\frac{13}{10}=1/3$	۰/۵)	۱۰

۱) $\cot\alpha = \frac{\cos\alpha}{\sin\alpha} = \frac{\cos\alpha}{|\sin\alpha|} \rightarrow |\sin\alpha| = \sin\alpha \rightarrow \sin\alpha > 0$

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

} نصف اول

۱۰) $\cos\left(\frac{11\pi}{12}+\alpha\right) = -\left(\cos\alpha\cos\frac{\pi}{12} + \sin\alpha\sin\frac{\pi}{12}\right)$

$\rightarrow \frac{-\sqrt{2}}{2}(\cos\alpha+\sin\alpha)$ $\qquad \cos\alpha = \frac{-\sqrt{\sqrt{2}}}{10}$

$\hookrightarrow -\frac{\sqrt{2}}{2}\left(\frac{-\sqrt{\sqrt{2}}}{10} + \frac{\sqrt{2}}{10}\right) = \frac{\mu}{\omega}$