نام و نام خانوادگی ... [illegible] ...... پاسخنامه تشریحی تکلیف شماره ۲۸ ... کلاس ... یازدهم تجربی B ....

$\frac{1}{\sqrt{\cos^2\alpha}}$

$\frac{1}{\cot\alpha} = \frac{\sin\alpha}{\cos\alpha}$

$\frac{1}{|\cos\alpha|} - \frac{\sin\alpha}{\cos\alpha}$

$\cos\alpha > 0$: $\frac{1-\sin\alpha}{\cos\alpha} = \frac{1-\sin\alpha}{\cos\alpha}$ ص

$\cos\alpha < 0$: $\frac{-1-\sin\alpha}{\cos\alpha} = \frac{\sin\alpha-1}{\cos\alpha}$ غ

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

$\Rightarrow \sin\alpha = |\sin\alpha| \Rightarrow \boxed{\sin\alpha>0}$

$-\frac{\pi}{6} < 2x < \frac{5\pi}{6} \Rightarrow -\frac{1}{2} < \sin 2x \le 1 \Rightarrow -\frac{1}{2} < \frac{m-1}{4} \le 1$

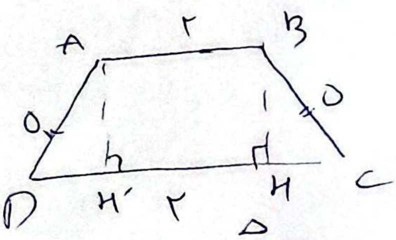
$\Rightarrow -2 < m-1 \le 4 \Rightarrow -1 < m \le 5 \Rightarrow \boxed{m \in (-1, 5]}$ ۲

$\frac{\sin x}{\cos x} + \frac{\cos x}{\sin x} = -3 \Rightarrow \sin x \cdot \cos x = -\frac{1}{3}$

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

$\frac{3\pi}{4} < x < \pi \Rightarrow \sin x + \cos x = -\frac{1}{\sqrt{3}}$

$\frac{1}{\sin^3 x + \cos^3 x} = \frac{1}{(\sin x + \cos x)(1 - \sin x \cos x)} = \frac{-\sqrt{3}}{\frac{4}{3}} = \boxed{-0/75\sqrt{3}}$



$B\overset{\triangle}{C}H: \cos\theta = \frac{CH}{BC} = \frac{CH}{5} = \frac{6}{10}$ $CH = 3$

$B\overset{\triangle}{C}H \overset{\text{و ز}}{\cong} A\overset{\triangle}{D}H' \Rightarrow DH' = CH = 3$

$ABHH' \rightarrow$ مستطیل $\rightarrow HH' = 2 \rightarrow CD = 3+2+3 = 8$ ۴

$B\overset{\triangle}{C}H: BH^2 = BC^2 - CH^2 = 25 - 9 = 16 \Rightarrow BH = 4$

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

$\tan 285^\circ = \tan(270^\circ + 15^\circ) = -\cot 15^\circ$

$\tan(-165^\circ) = \tan(-180^\circ + 15^\circ) = \tan 15^\circ$

$\sin 1095^\circ = \sin(1080^\circ + 15^\circ) = \sin(6\times180^\circ + 15^\circ) = \sin 15^\circ$ ۵

$\cos 255^\circ = \cos(270^\circ - 15^\circ) = -\sin 15^\circ$

$\tan 285^\circ \tan(-165^\circ) - \sin 1095^\circ \cos 255^\circ$

$= (-\cot 15^\circ)(\tan 15^\circ) - (\sin 15^\circ)(-\sin 15^\circ)$

$= -1 + \sin^2 15^\circ = -\cos^2 15^\circ \Rightarrow \boxed{K = -1}$

ادامه ⑧ $\Rightarrow 3\tan^2\frac{x}{2} + 8\tan\frac{x}{2} - 3 = 0$

$\Delta = 100 \longrightarrow \tan\frac{x}{2} = \frac{-8+10}{6} = \frac{1}{3}$

$\tan\frac{x}{2} = \frac{-8-10}{6} = \frac{-18}{6} = -3$ $\left(\tan\frac{x}{2} = -3\right)$ عاز فصل الی

$A = \sqrt{3}\cos(210^\circ)\sin(243^\circ) - \sqrt{2}\sin(135^\circ)\cos(153^\circ)$

$A = \sqrt{3}\cos(180^\circ + 30^\circ)\sin(270^\circ - 27^\circ) - \sqrt{2}\sin(180^\circ - 45^\circ)\cos(180^\circ - 27^\circ)$ ۶

$A = \sqrt{3}\left(-\frac{\sqrt{3}}{2}\right)(-\cos 27^\circ) - \sqrt{2}\left(\frac{\sqrt{2}}{2}\right)(-\cos 27^\circ)$

$A = \frac{3}{2}\cos 27^\circ + \cos 27^\circ = \frac{5}{2}\cos 27^\circ = \boxed{2/5\cos 27^\circ}$

$f\left(\frac{\pi}{24}\right) = 16\cos^2\left(\frac{2\pi}{24}\right)\cos^2\left(\frac{4\pi}{24}\right)\cos^2\left(\frac{8\pi}{24}\right)\cos^2\left(\frac{16\pi}{24}\right)$

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

$\cos^2\alpha = \frac{1+\cos 2\alpha}{2}$ $\quad \cos^2\left(\frac{\pi}{12}\right) = \frac{1+\cos\left(\frac{\pi}{6}\right)}{2} = \frac{1+\frac{\sqrt{3}}{2}}{2} = \frac{2+\sqrt{3}}{4}$

$16\left(\frac{2+\sqrt{3}}{4}\right)\left(\frac{\sqrt{3}}{2}\right)^2\left(\frac{1}{2}\right)^2\left(-\frac{1}{2}\right)^2 = 16\left(\frac{2+\sqrt{3}}{4}\right)\left(\frac{3}{4}\right)\left(\frac{1}{4}\right)\left(\frac{1}{4}\right)$

$= \frac{3(2+\sqrt{3})}{16} = \boxed{\frac{6+3\sqrt{3}}{16}}$

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

$\Rightarrow \sin x = \frac{-3}{5}$ ۸

$\sin^2 x + \cos^2 x = 1 \Rightarrow \cos^2 x = 1 - \sin^2 x = 1 - \frac{9}{25} = \frac{16}{25}$

$\xrightarrow[\text{ربع سوم } x]{\cos x < 0} \cos x = \frac{-4}{5}$ $\quad \tan x = \frac{-\frac{3}{5}}{-\frac{4}{5}} = \frac{3}{4}$ $\quad \tan x = \frac{2\tan\frac{x}{2}}{1-\tan^2\frac{x}{2}}$

$\frac{2\tan\frac{x}{2}}{1-\tan^2\frac{x}{2}} = \frac{3}{4} \Rightarrow 3 - 3\tan^2\frac{x}{2} = 8\tan\frac{x}{2}$ (ادامه در بالا)

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

① $\frac{\sin\theta}{1+\cos\theta} = \tan\frac{\theta}{2} \xrightarrow{\text{معکوس}} \frac{1+\cos\theta}{\sin\theta} = \cot\frac{\theta}{2}$

② $\frac{1-\cos\theta}{\sin\theta} = \tan\frac{\theta}{2} \xrightarrow{\text{معکوس}} \frac{\sin\theta}{1-\cos\theta} = \cot\frac{\theta}{2}$

$\xrightarrow{①,②} \cot\frac{\theta}{2} + \cot\frac{\theta}{2} = 2\cot\frac{\theta}{2}$ $\quad \boxed{k = 2}$

$\cos\left(\frac{11\pi}{4} + \alpha\right)$ $\quad \cos^2\alpha + \sin^2\alpha = 1 \quad \cos\alpha = \sqrt{1-\sin^2\alpha} = -\sqrt{\frac{49}{50}} = \frac{-7}{5\sqrt{2}}$

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

$\Rightarrow \left(\frac{-7}{5\sqrt{2}} \times \frac{-\sqrt{2}}{2}\right) - \left(\frac{\sqrt{2}}{10} \times \frac{\sqrt{2}}{2}\right) = \frac{7}{10} - \frac{1}{10} = \frac{6}{10} = \boxed{\frac{3}{5}}$