نام و نام خانوادگی: احمد سلاماتی — پاسخنامه تشریحی تکلیف شماره ۲۸ — کلاس یازدهم ریاضی B

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

$$-\frac{\cos\alpha}{\sqrt{1-\cos^2\alpha}} = -\frac{\cos\alpha}{\sqrt{\sin^2\alpha}} = -\frac{\cos\alpha}{|\sin\alpha|} \Rightarrow \sin\alpha < 0 \Rightarrow$$ α در ناحیه ۴

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

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

$$= \frac{1}{\frac{4}{3}(\sin x + \cos x)} \Rightarrow (\sin x + \cos x)^2 = 1 + 2\left(\frac{-1}{3}\right) \Rightarrow \sin x + \cos x = \pm\frac{1}{\sqrt{3}} \xrightarrow{\frac{3\pi}{4}<x<\pi} -\frac{1}{\sqrt{3}}$$

$$\to \frac{1}{\frac{4}{3} \times \frac{-1}{\sqrt{3}}} = \frac{-3\sqrt{3}}{4} = -0.75\sqrt{3}$$

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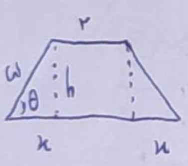

$$S = \frac{(2+(2+2x))\times h}{2} \qquad \cos\theta = \frac{x}{5} = 0.6 \Rightarrow x = 3$$

$$\sin\theta = \sqrt{1-(0.6)^2} = 0.8 \Rightarrow \frac{h}{5} = 0.8 \Rightarrow h = 4$$

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

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$$\tan(285^\circ)\tan(-165^\circ) - \sin(105^\circ)\cos(255^\circ) = \tan(270^\circ+15^\circ)(-\tan(180^\circ-15^\circ)) - \sin(15^\circ)\cos(270^\circ-15^\circ)$$

$$= (-\cot 15^\circ)(\tan 15^\circ) - (\sin 15^\circ)(-\sin 15^\circ) = -1 + \sin^2 15^\circ = -\cos^2 15^\circ \Rightarrow k = -1$$

$\sqrt{2}\times\frac{-\sqrt{2}}{2}\sin(270-27)-\sqrt{2}\times\frac{\sqrt{2}}{2}\cos(180-27)=\frac{3}{2}\cos 27^\circ+\cos 27^\circ=\frac{5}{2}\cos 27^\circ \Rightarrow \boxed{\frac{5}{2}\text{ برابر}}$ ۶

$f(x)=16\left(\frac{\sin 3x\cos 3x\cos 6x\cos 12x\cos 24x}{\sin 3x}\right)^2 \to f(x)=16\left(\frac{\frac{1}{16}\sin 48x}{\sin 3x}\right)^2 \Rightarrow f\left(\frac{\pi}{36}\right)=\frac{\sin^2\frac{4\pi}{3}}{16\sin^2\frac{\pi}{12}}$

$\to \frac{\frac{3}{4}}{16\left(\frac{1-\cos\frac{\pi}{6}}{2}\right)}=\frac{3}{16(2-\sqrt{3})}\times\frac{2+\sqrt{3}}{2+\sqrt{3}}=\boxed{\frac{6+3\sqrt{3}}{16}}$ ۷

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

$\frac{1-\cos x}{1+\cos x}=\tan^2\frac{x}{2}=\frac{1-\left(\frac{-4}{5}\right)}{1+\left(\frac{-4}{5}\right)} \Rightarrow \tan^2\frac{x}{2}=9 \to \tan\frac{x}{2}=\pm 3 \xrightarrow{\frac{x}{2}\text{ در ناحیه دوم}} \boxed{-3}$ ۸

$\frac{\sin\theta}{1-\cos\theta}+\frac{1+\cos\theta}{\sin\theta}=\frac{2\sin\frac{\theta}{2}\cos\frac{\theta}{2}}{2\sin^2\frac{\theta}{2}}+\frac{2\cos^2\frac{\theta}{2}}{2\sin\frac{\theta}{2}\cos\frac{\theta}{2}}=\cot\frac{\theta}{2}+\cot\frac{\theta}{2}=\boxed{2\cot\frac{\theta}{2}}$ ۹

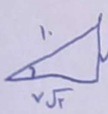
$\downarrow$

$\boxed{k=2}$

$\cos\frac{11\pi}{4}\cos\alpha-\sin\frac{11\pi}{4}\sin\alpha \Rightarrow \frac{\sqrt{2}}{2}\times\frac{7\sqrt{2}}{10}-\frac{\sqrt{2}}{2}\times\frac{\sqrt{2}}{10} \Rightarrow \frac{-14}{20}-\frac{2}{20} \Rightarrow \frac{-16}{20}=\frac{-8}{10}=\boxed{\frac{-4}{5}}$

$\downarrow$

$\cos\left(3\pi-\frac{\pi}{4}\right)=\cos\frac{3\pi}{4}$ ۱۰



$\to \cos\alpha=\frac{7\sqrt{2}}{10}$