نام و نام خانوادگی .... پاسخنامه تشریحی تکلیف شماره ...۱۷... کلاس ...دوازدهم ریاضی B...

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$8\cos x = 1+\tan^2 x = \frac{\sin^2 x+\cos^2 x}{\cos^2 x} = \frac{1}{\cos^2 x} = 8\cos x \Rightarrow \frac{1}{\cos^3 x} = 8 \Rightarrow \frac{1}{\cos x} = 2 \Rightarrow \cos x = \frac{1}{2} \Rightarrow \begin{cases} x = 2k\pi + \frac{\pi}{3} \\ x = 2k\pi - \frac{\pi}{3} \end{cases} \Rightarrow \frac{\pi}{3}, \frac{5\pi}{3}$

دو جواب

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$5\sin^2 x + 2(\underbrace{\cos 2x \cos x - \sin 2x \sin x}_{\cos^2 x - \sin^2 x - 2\sin^2 x \cos x}) = -2 \Rightarrow 5\sin^2 x + 2\cos^2 x - 2\sin^2 x - 2\sin^2 x \cos x = -2$

$\sin^2 x + 2 - 2\sin^2 x \cos x = -2 \Rightarrow 2 + \sin^2 x(1 - 2\cos x) = -2$

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$2\sin x \cos^2 x + 2\sin^3 x + \sin x = 1 \quad \sin x(1 + \underbrace{2\cos^2 x}_{\sin 2x}) + 2\sin^3 x = 1$ ~~$(2\sin^2 x + 1)$~~

$2\sin^2 x \cos x + 2\sin^3 x = 1 \Rightarrow 2\sin^2 x(1 + \cos x) = 1$

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$\frac{1}{\cos 4x} = \frac{1}{\sin 4x} \Rightarrow \cos 2x = \sin 4x \Rightarrow \cos 2x = 2\sin 2x \cos 2x \Rightarrow 2\sin 2x = 1 \Rightarrow \sin 2x = \frac{1}{2}$

$2x = 2k\pi + \frac{\pi}{6} \Rightarrow x = k\pi + \frac{\pi}{12} \rightarrow \frac{\pi}{12} \quad \Rightarrow \alpha = \frac{4\pi}{12} = \frac{\pi}{3} \Rightarrow \tan\frac{2\pi}{3} = -\sqrt{3}$

$2x = 2k\pi + \frac{5\pi}{6} \Rightarrow x = k\pi + \frac{5\pi}{12} \rightarrow \frac{5\pi}{12}$

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$\frac{\sqrt{2}}{2}(\cos x - \sin x) = \frac{1}{\sqrt{2}} \times \frac{2}{\sqrt{3}} = \frac{2\sqrt{6}}{6} \Rightarrow$

$m\left(\frac{2\sqrt{6}}{6}\right) - 3\sqrt{6}\sin 2x = \sqrt{6}$

$\frac{m}{3} - 3\sin 2x = 1$

$$\frac{\sin x}{2}\left(\frac{\cos x}{2}+\frac{\sin x\sqrt{3}}{2}\right)=\frac{\sin 2x}{8}+\frac{\sin^2 x\sqrt{3}}{4}$$

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$$-4\sin\cos x=-2\cos 2x=1 \Rightarrow 2x=2k\pi\pm\frac{2\pi}{3}$$

$$\cos 2x=-\frac{1}{2} \qquad x=k\pi+\frac{\pi}{3} \Rightarrow x=k\pi+\frac{\pi}{12}$$

$$\Rightarrow \int_{[0,2\pi]}\left\{0,\frac{5\pi}{12},\frac{\pi}{12},\frac{17\pi}{12},\frac{19\pi}{12}\right\}=\boxed{5\pi}$$

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

$$1+\cos^2 x-\sin^2 x$$

$$(1+\cos x)(2\cos^2 x)(1+2\cos^2 x)$$

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$$2x+x=\frac{3\pi}{2}+2k\pi \Rightarrow x=\frac{\pi}{2}+k\pi \Rightarrow x=k\pi+\pi/4$$

$$2x+x=\frac{2\pi}{2}+2k\pi \Rightarrow x=\frac{2\pi}{3}+k\pi \Rightarrow x=\frac{2\pi}{3}$$

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