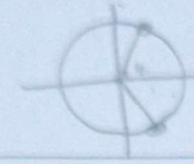
نام و نام خانوادگی ...... فریبا شاکری   پاسخنامه تشریحی تکلیف شماره ...... کلاس ......

لطفا ضرب تکلیف بنویس   ۵

۱

$8\cos x - \tan^2 x = 1 \Rightarrow 8\cos x = 1+\tan^2 x \Rightarrow 8\cos x = \frac{1}{\cos^2 x}$

$8\cos^3 x = 1 \Rightarrow \cos^3 x = \frac{1}{8} \Rightarrow \cos x = \frac{1}{2}$



۲ جواب دارد

$1 + \frac{\cos 3x}{2} = \cos^2 \frac{3x}{2}$ ۲

۲

$5\sin^2(x) + 2\cos(3x) = -2 \Rightarrow 5\sin^2 x + 2(4\cos^3 x - 3\cos x) = -2$

$5\sin^2 x + 8\cos^3 x - 3\cos x = -2 \xRightarrow{\times \frac{1}{\sin^2 x}} 5 + 8\cot^2 x \times \cos x - \cot x \times \frac{1}{\sin x} = -2$

دو عبارت نامنفی $= 0$

$5\sin^2 x + 4\cos^2 \frac{3x}{2} = 0$

$\sin x = 0 \to \pi, -\pi, 0$

$\cos \frac{3x}{2} = 0 \to \pi, -\pi, \frac{\pi}{3}, -\frac{\pi}{3}$

$\frac{\cos^2 x}{\sin^2 x} = \frac{\cos^2 x}{\sin^2 x} \times \frac{\cos x}{1}$ $+\pi, -\pi$

۰

۳

$2\sin(x)\cos(2x) + \sin(x) = 1 \xRightarrow{\times \cos x} \sin(2x)\cos(2x) + \frac{1}{2}\sin(2x) = \cos(x)$

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

$-4\sin^3 x + 3\sin x = 1 \to \sin 3x = 1$

$3x = 2k\pi + \frac{\pi}{2}$ $x = \frac{2k\pi}{3} + \frac{\pi}{6}$

۰

۴

$\frac{1}{\sin(\frac{\pi+4x}{2})} + \frac{1}{\cos(\frac{\pi+8x}{2})} = \frac{1}{\sin(\frac{\pi}{2}+2x)} + \frac{1}{\cos(\frac{\pi}{2}+4x)} = 0$

($\sin(\frac{\pi}{2}+2x) = \cos(2x)$, $\cos(\frac{\pi}{2}+4x) = -\sin(4x)$)

$\frac{1}{\cos(2x)} + \frac{1}{-\sin(4x)} = 0$ $\cos(2x) = \sin(4x) = 0$ $\frac{\pi}{2}$ $\frac{\pi}{2}$

۰/۵

$\cos 2x - 2\sin 2x \cos 2x = 0$

۵

$\cos 2x(1 - 2\sin 2x) = 0$

$\cos 2x \neq 0$ مخرج صفر نشود

$\sin 2x = \frac{1}{2} \to 2x = 2k\pi + \frac{\pi}{6}$, $2x = 2k\pi + \frac{5\pi}{6}$

$\cos(x + \frac{\pi}{6}) = \frac{\sqrt{3}}{2}$

$\frac{\sqrt{3}}{2}\cos x - \sin x = \frac{\sqrt{3}}{2}$

$m \times \frac{\sqrt{3}}{4} - \frac{1}{2} \times 2\sqrt{3} = \sqrt{3}$

$m = 4$

فرید غازی

$\sin(x+\frac{\pi}{4})\cos(x-\frac{\pi}{3})=1$ $\quad \sin(x+\frac{\pi}{4})=\pm 1$ $2x+\frac{\pi}{4}-\frac{\pi}{3}=\frac{\pi}{2} \Rightarrow 2x-\frac{3\pi}{18}=\frac{\pi}{9} \Rightarrow 2x=\frac{3\pi}{18} \Rightarrow x=\frac{4\pi}{18}=\frac{\pi}{3}$ $x+\frac{\pi}{4}=k\pi+\frac{\pi}{2} \to x=k\pi+\frac{\pi}{4}$ ۰/۲	۶
$\sin x+\sqrt{3}\cos x=\sqrt{2}$ ۱/۵ $\frac{b}{a}=\frac{\sqrt{3}}{1} \Rightarrow \tan(\alpha)=\sqrt{3} \Rightarrow \alpha=\frac{\pi}{3}$ $\sqrt{(\sqrt{3})^2+(1)^2}\sin(x+\frac{\pi}{3})=\sqrt{2} \Rightarrow 2\sin(x+\frac{\pi}{3})=\sqrt{2} \Rightarrow \sin(x+\frac{\pi}{3})=\frac{\sqrt{2}}{2}$ $x+\frac{\pi}{3}=2k\pi+\frac{\pi}{4}$ $\quad x=2k\pi-\frac{\pi}{12}$ $x+\frac{\pi}{3}=2k\pi+\pi-\frac{\pi}{4} \Longrightarrow x=2k\pi+\frac{5\pi}{12}$ $\to x=-\frac{\pi}{12}$ و $\frac{23\pi}{12}$, $\frac{5\pi}{12}$, $x=\frac{9\pi}{4}$	۷
$4\sin x\sin(\frac{3\pi}{2}-x)=1 \Rightarrow 4\sin(x)\times-\cos(x)=1$ $-4\sin x\cos x=1 \Rightarrow -2\sin 2x=1 \Rightarrow \sin 2x=-\frac{1}{2}$ → $2x=\frac{7\pi}{6}$, $2x=\frac{11\pi}{6}$ $x=\frac{3.5\pi}{6}$, $x=\frac{5.5\pi}{6}$ $\quad \frac{3.5\pi}{6}+\frac{5.5\pi}{6}=\frac{9\pi}{6}=\frac{3\pi}{2}$ ۱	۸
$\cos\alpha\cos 2\alpha\cos 4\alpha=\pm\frac{1}{8}$ $8\sin\alpha$ $\quad \sin 8\alpha=\pm\sin\alpha$ $\sin\alpha\neq 0$ $\alpha=\frac{2k\pi}{7}$ $\quad \alpha=\frac{2k\pi+\pi}{7}$ $\alpha=\frac{2k\pi}{9}$ $\quad \alpha=\frac{2k\pi+\pi}{9}$ $\quad$ } $\max A=\frac{8\pi}{9}$ ۱/۰	۹
$\tan(3x)\tan(x)=1 \Rightarrow \tan(3x)=\frac{1}{\tan(x)}$ $\tan(3x)=\cot(x) \Longrightarrow \tan 3x=\tan(\frac{\pi}{2}-x)$ ۱ $3x=k\pi+\frac{\pi}{2}-x \Longrightarrow 4x=k\pi+\frac{\pi}{2} \Rightarrow x=\frac{k\pi}{4}+\frac{\pi}{8}$ $\frac{9\pi}{8}+\frac{11\pi}{8}+\frac{13\pi}{8}+\frac{15\pi}{8}=6\pi$	۱۰