نام و نام خانوادگی ..امیرعلی رئیسی.......... پاسخنامه تشریحی تکلیف شماره ..۱۹... کلاس ....دوازدهم B..........

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الف)

$2\sin^2x+3\sin x-2=0 \Rightarrow \sin x=\frac{1}{2} \Rightarrow x=2k\pi+\frac{\pi}{6}$

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

ب)

$2\cos^2x+\cos x-3=0$

$\cos x=1 \Rightarrow x=2k\pi$

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الف)

$-\cos 2x=2\sin 2x\cos 2x \Rightarrow \sin 2x=-\frac{1}{2} \Rightarrow 2x=2k\pi-\frac{\pi}{6} \Rightarrow x=k\pi-\frac{\pi}{12}$

$\Rightarrow \cos 2x=0 \Rightarrow 2x=2k\pi\pm\frac{\pi}{2}$ $\Rightarrow 2x=2k\pi+\pi+\frac{\pi}{6} \Rightarrow x=k\pi+\frac{7\pi}{12}$

$x=k\pi\pm\frac{\pi}{4}$

ب)

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

$2x+\frac{\pi}{2}=2k\pi-2x \Rightarrow x=\frac{k\pi}{4}-\frac{\pi}{8}$

$\cancel{2x}+\pi=2k\pi+\cancel{2x}+\pi \rightarrow$ غ ق ق

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الف)

$2\cos x+1=\frac{1}{\cos x} \Rightarrow 2\cos^2x+\cos x-1=0$

$\cos x=-1 \Rightarrow x=2k\pi+\pi$

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

ب)

$\cancel{2}-2\cos^2x-\sin x\cos x+\cos^2x=\cancel{2} \Rightarrow \cos^2x=-\sin x\cos x \Rightarrow \cos x=-\sin x$

$\Rightarrow \cos x=0 \Rightarrow x=2k\pi\pm\frac{\pi}{2}$

$\Downarrow$

$x=k\pi-\frac{\pi}{4}$

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الف)

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

متمم

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

$x=k\pi\pm\frac{\pi}{6}$

ب)

$\cos(2x-\frac{\pi}{9})=\cos(2x+\frac{\pi}{2}) \Rightarrow 2x-\frac{\pi}{9}=2k\pi\pm(2x+\frac{\pi}{2})$

$2x-\frac{\pi}{9}=2k\pi-2x-\frac{\pi}{2} \Rightarrow 4x=2k\pi-\frac{7\pi}{18} \Rightarrow x=\frac{k\pi}{2}-\frac{7\pi}{72}$

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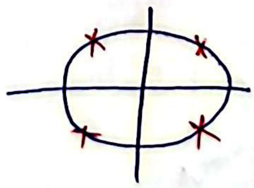
$\sin 4x+\sin 2x=\sin 2x \Rightarrow \sin 4x=0 \Rightarrow 4x=k\pi \Rightarrow x=\frac{k\pi}{4}$

$\sin 2x\neq 0 \Rightarrow x\neq\frac{k\pi}{2}$

مجموعه جواب معادله: $\frac{k\pi}{4}-\{\frac{k\pi}{2}\}$



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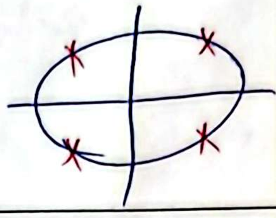
$\tan x = \frac{1+\cos\frac{x}{2}}{\sin\frac{x}{2}} \Rightarrow \tan x = \cot x \Rightarrow x = \frac{k\pi}{2} + \frac{\pi}{4}$



$\left|-\frac{3\pi}{4} - \cancel{\left(-\frac{\pi}{4}\right)} \cancel{-\frac{\pi}{4}} - \frac{3\pi}{4} - \frac{5\pi}{4}\right| = \frac{11\pi}{4}$

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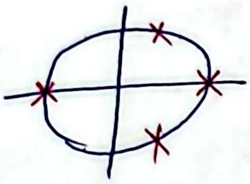
$\cancel{\cos^2 x} - \sin^2 x \cos 3x = \sin^2 x + \cancel{\cos^2 x} \Rightarrow \sin^2 x(1+\cos 3x) = 0$

$\sin^2 x = 0 \Rightarrow x = k\pi$

$\cos 3x = -1 \Rightarrow 3x = 2k\pi + \pi$

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



۴ جواب

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$\tan(\alpha+\frac{\pi}{4}) = \frac{\tan\alpha+\tan\frac{\pi}{4}}{1-\tan\alpha\tan\frac{\pi}{4}} = \frac{1+\tan\alpha}{1-\tan\alpha}$

$\tan(\alpha+\frac{\pi}{4}) = \tan 3\alpha$

$\alpha+\frac{\pi}{4} = k\pi + 3\alpha \Rightarrow \alpha = \frac{-k\pi}{2} + \frac{\pi}{8} = \frac{k\pi}{2} + \frac{\pi}{8}$

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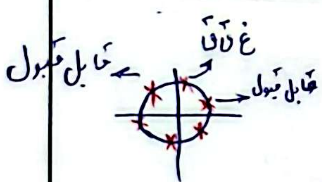
$\cos 2x \neq 0$ $\quad 1+\sin 2x = 2\cos^2 2x \Rightarrow 1+\sin 2x = 1+\cos 4x \Rightarrow \sin 2x = \cos 4x$

$\sin 2x = 1 - 2\sin^2 2x \Rightarrow 2\sin^2 2x + \sin 2x - 1 = 0$



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

$\sin 2x = \frac{1}{2} \Rightarrow 2x = 2k\pi + \frac{\pi}{6} \Rightarrow x = k\pi + \frac{\pi}{12}$

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

۲ جواب

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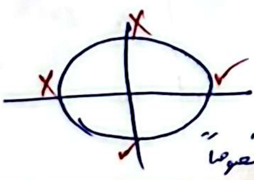
الف) $-\cos 2x = 1 \Rightarrow \cos 2x = -1 \Rightarrow 2x = 2k\pi + \pi \Rightarrow x = k\pi + \frac{\pi}{2}$

$\frac{\pi}{2}$ و $\frac{3\pi}{2}$

ب) 0 و $\frac{3\pi}{2}$, 2π



برای مورد الف هم می‌شد از این راه رفت اما چون نمی‌دونستیم تو درس مخصوصاً
تو نهایی نمره داره عادی حلش کردم روش حل مورد (ب) در نهایی نمره بهش تعلق میگیره؟