۱۴٫۷۵

نام و نام خانوادگی ......نما کاظمی...... پاسخنامه تشریحی تکلیف شماره ...۲۸... کلاس ......B......

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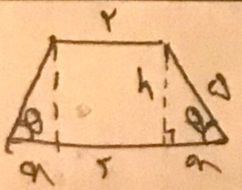
|---|---|
| ۱ (۲) | $\frac{1}{\cos} - \frac{\sin}{\cos} = \frac{+1-\sin\alpha}{\lvert\cos\alpha\rvert}$ $\quad \cos>0$<br>$\frac{\cos\alpha}{\sqrt{\sin^2}} = \frac{\cos}{\sin}$ ناحیه اول ✓<br>$\sin>0$ |
| ۲ (۲) | $-\frac{\pi}{12}<x<\frac{5\pi}{12} \to -\frac{\pi}{6}<2x<\frac{5\pi}{6}$ $\quad \frac{m-1}{4}\le 1 \quad \frac{m-5}{4}\le 0$<br>$-\frac{1}{2}<\sin 2x\le 1 \to -\frac{1}{2}<\frac{m-1}{4}\le 1$ $\quad m\le 5$<br>$-\frac{1}{2}<\frac{m-1}{4} \to 0<\frac{m+1}{4}$ $\quad m>-1$ $\quad m\in(-1,5]$ ✓ |
| ۳ (۱٫۵) | $\frac{\sin}{\cos}+\frac{\cos}{\sin}=\frac{1}{\sin\cos}=-3$ $\quad \sin\cos=\frac{-1}{3}$ ✓ $\quad (\sin+\cos)^2=\underbrace{\sin^2+\cos^2}_{1}+\underbrace{2\sin\cos}_{-\frac{2}{3}}=\frac{1}{3}$<br>$\left.\begin{array}{l}\sin+\cos=\frac{\pm1}{\sqrt{3}}\\ \frac{3\pi}{4}<x<\pi\end{array}\right\}$ $\sin+\cos=\frac{-1}{\sqrt{3}}$ ✓ $\to (\sin+\cos)^3=\sin^3+\cos^3+3\underbrace{\sin\cos}_{-\frac{1}{3}}\underbrace{(\sin+\cos)}_{\frac{-1}{\sqrt{3}}}=\frac{\sqrt{3}}{9}$<br>$\sin^3+\cos^3=\frac{\sqrt{3}}{9}-\frac{3\sqrt{3}}{9}=\frac{-2\sqrt{3}}{9}$ $\quad \frac{1}{\sin^3+\cos^3}=\frac{-9}{2\sqrt{3}}=\frac{3\sqrt{3}}{2}$ |
| سوال ۵ (۲) | $\frac{\sin(\frac{3\pi}{2}+15)}{\cos(\frac{3\pi}{2}+15)}\times\frac{\sin(\pi+15)}{\cos(\pi+15)}-\sin(6\pi+15)\times\cos(\frac{3\pi}{2}-15)$<br>$\frac{-\cos(15)}{\sin(15)}\times\frac{-\sin(15)}{-\cos(15)}-\sin(15)\times(-\sin(15))$<br>$-1+\sin^2(15)=-\cos^2(15)$ $\quad k=-1$ ✓ |
| سوال ۴ (۲) | <br>$5\times\cos\theta=x$ (۰/۶) $\quad \cos^2+\sin^2=1$ (۰/۳۶، ۰/۶۴) $\quad \sin=0/8$<br>$3+3+2=8$<br>$\frac{(2+8)\times4}{2}=20$ ✓ $\quad h=5\times\sin\theta$ (۰/۸) |

$\frac{\sqrt{3}}{2}$

$\sqrt{3}\cos\sqrt{3}x - \cos(30)\times\sin(\frac{3\pi}{2}-27)-\sqrt{2}\times\sin(45)\times\cos(\pi-27)$ ۱/۷۵ ۶

$\sqrt{3}\times\frac{\sqrt{3}}{2}\times\cos(27) = -\sqrt{2}\times\frac{\sqrt{2}}{2}\times(-)\cos(27)$

$+\cos(27)+\cos(27)=2\cos(27)$

آفرین

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$\to 4\sqrt{\cos(3\alpha)\cos(6\alpha)\cos(12\alpha)\cos(24\alpha)}\times\sqrt{8\sin(3\alpha)}$ ۰

$8\sin(3\alpha)\times\cos(3\alpha) \to \frac{\sin(6\alpha)}{2}\times\cos(6\alpha)=\frac{\sin(12\alpha)}{4}\times\cos(12\alpha)=\frac{\sin(24\alpha)}{8}$ ۷

$\frac{\sin(24\alpha)}{8}\times\cos(24\alpha)=\frac{\sin(48\alpha)}{16}$ $\left(\frac{16\times\frac{\sin(48\alpha)}{16}}{\sin(3\alpha)}\right)=\frac{+\sin(45)}{\sin(15)}$ $\frac{4}{3}\frac{1}{\sin(15}$

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$1-\sin\alpha=4+4\sin\alpha$ $\quad\sin\alpha=\frac{-3}{5}$ $\quad\cos=\frac{-4}{5}$ ✓ ۱/۵

$\frac{2\tan\frac{\alpha}{2}}{1-\tan^2\frac{\alpha}{2}}=\tan\alpha=\frac{3}{4}$ $\quad 8\tan\frac{\alpha}{2}=3-3\tan^2\frac{\alpha}{2}$ ۸

$3\tan^2\frac{\alpha}{2}+8\tan\frac{\alpha}{2}-3=0$ $\quad\frac{-8\pm\sqrt{64+36}}{6}$ $\quad \tan>0$ $\quad \cancel{\frac{1}{3}}$ $\quad -\frac{18}{6}=\boxed{-3}$

$\frac{\pi}{2}<\frac{\alpha}{2}<\frac{3\pi}{4}\to$ ناحیه دوم $\to\tan\frac{\alpha}{2}<0$

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$\frac{\sin^2\alpha+1-\cos^2\alpha}{(1-\cos\alpha)\sin\alpha}=\frac{2\sin\alpha}{1-\cos\alpha}=\frac{4\sin\frac{\alpha}{2}\cos\frac{\alpha}{2}}{\underbrace{1-\cos^2\frac{\alpha}{2}+\sin^2\frac{\alpha}{2}}_{2\sin^2\frac{\alpha}{2}}}=\frac{4\cos\frac{\alpha}{2}}{2\sin\frac{\alpha}{2}}$ ۲ ۹

$k=2$ ✓ $\quad 2\cot\frac{\alpha}{2}$

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$\sin\alpha=\frac{\sqrt{2}}{10}$ $\quad\cos(\frac{3\pi}{4}+\alpha)=\cos\frac{3\pi}{4}\times\cos\alpha-\sin\frac{3\pi}{4}\times\sin\alpha$ ۲

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

ناحیه ۲ $\to -\frac{\sqrt{2}}{2}\times\cos\alpha-\frac{\sqrt{2}}{2}\sin\alpha$ $\quad -\frac{\sqrt{2}}{2}\left(\frac{\sqrt{2}}{10}-\frac{7\sqrt{2}}{10}\right)$ ۱۰

$\frac{12}{20}=0/6$ ✓

$(\sin\alpha+\cos\alpha)^{۲}=۱+۲\sin\alpha\cos\alpha$ ۳ـ

$=۱+۲(\frac{-۱}{۳})=\frac{۱}{۳}$

$۳\pi<۴x<۴\pi\to\frac{۳}{۴}\pi<x<\pi\xrightarrow{\sin x+\cos x<۰}\frac{-\sqrt{۳}}{۳}$

$\sin^{۳}x+\cos^{۳}x=(\sin x+\cos x)(\underbrace{\sin^{۲}x+\cos^{۲}x-\sin x\cos x}_{۱-(-\frac{۱}{۳})=\frac{۴}{۳}})=\frac{-\sqrt{۳}}{۳}(\frac{۴}{۳})$

$\longrightarrow\frac{۱}{\sin^{۳}x+\cos^{۳}x}=\boxed{\frac{-۳}{۴}\sqrt{۳}}$

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$A=\sqrt{۳}(-\frac{\sqrt{۳}}{۲})\sin(۲۷۰-۲۷)-\sqrt{۲}\times\frac{\sqrt{۲}}{۲}\cos(۱۸۰-۲۷)$ ۶ـ

$A=\frac{۳}{۲}\cos ۲۷+\cos ۲۷=\frac{۵}{۲}\cos ۲۷$

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$f(\frac{\pi}{۳۶})=۱۶\cos^{۲}(\frac{\pi}{۱۲})\cos^{۲}(\frac{\pi}{۶})\cos^{۲}(\frac{\pi}{۳})\cos^{۲}(\frac{۲\pi}{۳})$ ۷ـ

$\cos^{۲}\frac{\pi}{۱۲}=\frac{۱+\cancel{\cos\frac{\pi}{۶}}^{\frac{\sqrt{۳}}{۲}}}{۲}\to\cos^{۲}\frac{\pi}{۱۲}=\frac{۲+\sqrt{۳}}{۴}$

$f(\frac{\pi}{۳۶})=۱۶(\frac{۲+\sqrt{۳}}{۴})\times\frac{۳}{۴}\times\frac{۱}{۴}\times\frac{۱}{۴}=\boxed{\frac{۳(۲+\sqrt{۳})}{۱۶}}$

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$\sin x=\frac{۲\tan\frac{x}{۲}}{۱+\tan^{۲}\frac{x}{۲}}=\frac{-۳}{۵}\to ۱۰\tan\frac{x}{۲}=-۳-۳\tan^{۲}\frac{x}{۲}$ ۸ـ

$\tan\frac{x}{۲}=\frac{-۱}{۳}$ ✗ غیرصحیح!

$\boxed{\tan\frac{x}{۲}=-۳}$ ✓