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نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۷۸ کلاس ..... A

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$$\frac{1}{\sqrt{\cos^2\alpha}} - \frac{1}{\cot\alpha} = \frac{1}{|\cos\alpha|} - \frac{\sin\alpha}{\cos\alpha} = \frac{1-\sin\alpha}{|\cos\alpha|} \to \frac{-\sin\alpha}{\cos\alpha} = \frac{-\sin\alpha}{|\cos\alpha|}$$

$\to \cos\alpha > 0$ I

$$\cot\alpha = \frac{\cos\alpha}{\sqrt{\underbrace{1-\cos^2\alpha}_{\sin^2\alpha}}} \to \frac{\cos\alpha}{\sin\alpha} = \frac{\cos\alpha}{|\sin\alpha|} \to \sin\alpha > 0 \quad \text{II}$$

$\text{I} \cap \text{II} \to$ ناحیه ۱

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$$\frac{-\pi}{12} < x < \frac{5\pi}{12} \to \frac{-\pi}{6} < 2x < \frac{5\pi}{6} \to \frac{-1}{2} < \underbrace{\sin 2x}_{\frac{m-1}{4}} \leq 1$$

$$\to \frac{-1}{4} < \frac{m}{4} \leq \frac{5}{4} \xrightarrow{\times 4} -1 < m \leq 5$$

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$$\tan x + \cot x = \frac{1}{\sin x \cos x} = -3$$

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

$$(\sin-\cos)^2 = 1 + \frac{2}{3} = \frac{5}{3}$$

$$\frac{3\pi}{4} < x < \pi$$

$$\frac{1}{\underbrace{(\sin+\cos)}_{-\frac{1}{\sqrt{3}}}\underbrace{(\sin^2 - \sin\cos + \cos^2)}_{1-(-\frac{1}{3})=\frac{4}{3}}} = \frac{-3\sqrt{3}}{4}$$

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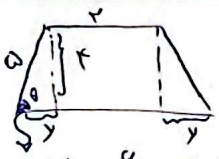

$$\cos\theta = \frac{4}{5} \to y = 3 \to \text{قاعده بزرگ} = 3y + 2 = 8 \to S_{\text{ذوزنقه}} = \frac{(8+2)\times 4}{2} = 20$$

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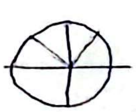
$$\tan(270+15) \times \tan(-18+15) - \sin 15 \times \cos(270-15)$$

$$= -\cot 15 \times \tan 15 + \sin^2 15 \to -1 + \sin^2 15 = k\cos^2 15$$

$$1 - \cos^2 15$$

$\to k = -1$

$-\sin 63$ $\sqrt{3}\cos 210 \times \sin 243 - \sqrt{2}\sin(135)\cos(153)$ $\Rightarrow -\sqrt{3}\times\frac{\sqrt{3}}{2}\times -\cos 27 - \sqrt{2}\times\frac{\sqrt{2}}{2}\times -\cos 27$ ($-\frac{3}{2}$, $+1$) $= +\frac{3}{2}\cos 27 + \cos 27 = \cos 27\left(+\frac{5}{2}\right) \sim \frac{+\frac{5}{2}\times\cos 27}{\cos 27}$ $\cos 27$ برابر $\left(+\frac{5}{2}\right)$ ۱	۶
$h\left(\frac{\pi}{24}\right) = 16\cos^2\left(\frac{\pi}{12}\right)\cos^2\left(\frac{\pi}{4}\right)\cos^2\left(\frac{\pi}{3}\right)\cos^2\left(\frac{2\pi}{3}\right)$ $*\ \cos^2 15 = \frac{1+\cos 30}{2} = \frac{2+\sqrt{3}}{4}$ $16\left(\frac{2+\sqrt{3}}{4}\right)\times\frac{2}{4}\times\frac{1}{4}\times\frac{1}{4} = \frac{3}{28}(2+\sqrt{3}) = \frac{6+3\sqrt{3}}{2\times 8} = \frac{6+3\sqrt{3}}{16}$ ۱	۷
طرفین وسطین $\sim 1-\sin x = 4+4\sin x \to \sin x = \frac{-3}{5}$ $\quad * \sin^2+\cos^2=1$ $\cos x = \frac{-4}{5}$, $\sin 2\theta = \frac{2\tan\theta}{1+\tan^2\theta} \to \sin x = \frac{2\tan\frac{x}{2}}{1+\tan^2\frac{x}{2}} = -\frac{3}{5}$ $\quad$ * در ربع ۳ ، $\cos,\sin<0$ $10\tan\frac{x}{2} = -3-3\tan^2\frac{x}{2} \to 3\tan^2\frac{x}{2}+10\tan\frac{x}{2}+3=0$ $\left(3\tan\frac{x}{2}+1\right)\left(\tan\frac{x}{2}+3\right)=0$ $\to \tan\frac{x}{2} = -\frac{1}{3}$ ✗ , $\tan\frac{x}{2} = \boxed{-3}$ ۱	۸
$\frac{\sin\theta}{1-\cos\theta}+\frac{1+\cos\theta}{\sin\theta} = k\cot\frac{\theta}{2}$ $\frac{1}{\tan\frac{\theta}{2}}+\frac{1}{\tan\frac{\theta}{2}} = \frac{2}{\tan\frac{\theta}{2}} = \frac{k}{\tan\frac{\theta}{2}} \to k=2$ ۱	۹
$\cos\left(\frac{11\pi}{4}+\alpha\right) = \cos\left(\frac{3}{4}\pi+\alpha\right)$  $=\cos\frac{3}{4}\pi\times\cos\alpha - \sin\frac{3\pi}{4}\times\sin\alpha$ $= -\frac{\sqrt{2}}{2}\times\frac{-7\sqrt{2}}{10} - \frac{\sqrt{2}}{2}\times\frac{\sqrt{2}}{10} = 0/6$ ۱	۱۰