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

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$\cot\alpha = \frac{\cos\alpha}{\sqrt{1-\cos^2\alpha}} = \frac{\cos\alpha}{\sqrt{\sin^2\alpha}} \to \cot\alpha = \frac{\cos\alpha}{\sin\alpha} \to \sin\alpha > 0 \to$ ربع ۱ و ۲

$\sqrt{\sin^2\alpha} = |\sin\alpha|$

$\frac{1}{|\cos\alpha|} - \frac{\sin\alpha}{\cos\alpha} = \frac{1-\sin\alpha}{|\cos\alpha|} \to$ ربع ۴

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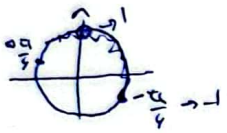
۲

$-\frac{\pi}{6} < x < \frac{\pi}{2} \to -\frac{1}{2} < \sin x < 1 \to \frac{-1}{2} < \frac{1-m}{4} < 1 \to -2 < 1-m < 4 \to -3 < -m < 3 \to -3 < m < 3$



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$\tan\alpha + \cot\alpha = -3$ ($\tan+\cot = \frac{1}{\sin\cos}$)

$\sin\alpha\cos\alpha = -\frac{1}{3}$

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

$(\sin+\cos)^2 = \sin^2+\cos^2+2\sin\cos$

$\sin+\cos = -1/\sqrt{3}$

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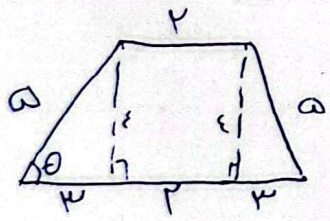

$\cos\theta = \frac{2}{10} = \frac{3}{5}$

$S = \frac{(8+2)\times 4}{2} = 20$

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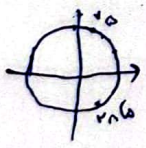

$\tan(11\pi) \to \tan(\frac{3\pi}{3} - 10) = -\cot(10)$

$\tan(-14\alpha) \to -\tan(14\alpha) = -\tan(\pi - 10) = +\tan 10$

$\sin(109\alpha) = \sin 10$

$\cos(25\alpha) = \cos(\frac{3\pi}{2} - 10) = -\sin 10$

$\to -\cot 10 \times \tan 10 - \sin 10 \times -\sin 10$

$= -1 + \sin^2 10 = -\cos^2 10$

$\pi = -1$

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$\cos 210 = -\frac{\sqrt{3}}{2}$

$\sin 240 = \sin(\frac{4\pi}{3} - 2\pi) = -\cos 30$

$\sin(300) = \frac{\sqrt{3}}{2}$

$\cos(|\phi|) = \cos(\pi - 2\pi) = \cos 120$

$\sqrt{3} + -\frac{\sqrt{3}}{2} \times -\cos 120 \times \cos 210$

$\frac{\sqrt{3}}{2} \cdot \frac{1}{2} \cos 120$

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$16\cos^2(\frac{11}{12}\pi)\cos^2(\frac{5}{12}\pi)\cos^2(\frac{3}{12}\pi)\cos^2(\frac{1}{12}\pi) = (\frac{\sqrt{3}}{2} \times \frac{\sqrt{3}}{2} - \frac{1}{2} \times \frac{1}{2})^2 = (\frac{3}{4} - \frac{1}{4})^2 = (\frac{2}{4})^2 = \frac{1}{4}$

۸

$\frac{1-\sin\alpha}{1+\sin\alpha} = 3 \to 1 + 3\sin\alpha < 1 - \sin\alpha \to 4\sin\alpha = -2 \to \sin\alpha = -\frac{2}{4}$

$\cos\alpha = -\frac{\sqrt{3}}{2}$

$\tan\frac{\alpha}{2} = \frac{\sin\alpha}{1+\cos\alpha} = \frac{-0.5}{0.5} = -1$

۹

$\frac{\sin\theta}{1-\cos\theta} + \frac{1+\cos\theta}{\sin\theta} = a\cot\frac{\theta}{2}$

$\sin\alpha = 2\sin(\frac{\alpha}{2})\cos(\frac{\alpha}{2})$

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

$1 + \cos\alpha = 2\cos^2(\frac{\alpha}{2})$

$\to \frac{2\sin(\frac{\alpha}{2})\cos(\frac{\alpha}{2})}{2\sin^2(\frac{\alpha}{2})} + \frac{2\cos^2(\frac{\alpha}{2})}{2\sin(\frac{\alpha}{2})\cos(\frac{\alpha}{2})} = 2\cot\frac{\alpha}{2}$

$a = 2$

۱۰

$1 - \sin^2\alpha = \cos^2\alpha \to 1 - \frac{1}{100} = \cos^2\alpha$

$\cos\alpha = -\frac{\sqrt{99}}{10}$

$\sin\alpha$ در ربع دوم $\cos\alpha$ منفی

$\cos(11\frac{\pi}{3} + \alpha) \to \cos(\frac{3\pi}{3} + \alpha) = \cos\frac{3\pi}{3}\cos\alpha - \sin\frac{3\pi}{3}\sin\alpha = (-\frac{1}{2} \times -\frac{\sqrt{99}}{10}) - (\frac{\sqrt{3}}{2} \times \frac{1}{2})$

$\cos(A+B)$

$= \frac{\sqrt{99}}{20} - \frac{\sqrt{3}}{4}$

1) $\cot\alpha = \frac{\cos\alpha}{\sin\alpha} = \frac{\cos\alpha}{|\sin\alpha|} \rightarrow |\sin\alpha| = \sin\alpha \rightarrow \sin\alpha > 0$

$\frac{1}{\sqrt{\cos^2\alpha}} - \frac{1}{\cot\alpha} = \frac{1-\sin\alpha}{|\cos\alpha|} \rightarrow \cos\alpha = |\cos\alpha| \rightarrow \cos > 0$

} ناحیه اول