فاطمه فروتن — تکلیف ۲۸ — یازده دفتر B

موضوع: — تاریخ: / /

۱۹,۷۵

۱)

$\cot = \dfrac{\cos\alpha}{|\sin\alpha|}$

$\dfrac{1}{|\cos\alpha|} - \dfrac{1}{\dfrac{\cos\alpha}{\sin\alpha}} = \dfrac{1-\sin\alpha}{|\cos\alpha|}$

$\dfrac{|\sin\alpha|}{\cos} \rightsquigarrow \sin \to +$

$\cos \to +$

ناحیه اول

۵

۲)

$-\dfrac{1}{2} < \sin 2x \leq 1$ $\quad -\dfrac{\pi}{6} < 2x < \dfrac{5\pi}{6}$ $\quad -\dfrac{\pi}{12} < x < \dfrac{5\pi}{12}$

$-\dfrac{1}{2} < \dfrac{m-1}{4} \leq 1$ $\quad \boxed{-1 < m \leq 5}$

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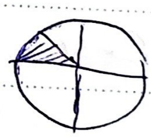
۳)

$\cos\cdot\sin = -\dfrac{1}{3}$

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

$3\pi < x < 4\pi \xrightarrow{\div 4} \dfrac{3\pi}{4} < x < \pi$



$\to |\cos| > |\sin|$ ①

$\sin + \cos = \sqrt{\sin^2 + \cos^2 + 2\sin\cos} = \sqrt{1 - \dfrac{2}{3}} = \dfrac{1}{\sqrt{3}} \xrightarrow{①} -\dfrac{1}{\sqrt{3}}$

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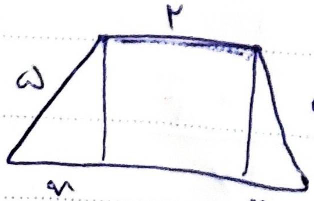
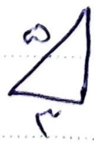
$\dfrac{1}{\sin^3 + \cos^3} = \dfrac{1}{(\sin+\cos)(\sin^2+\cos^2-\sin\cos)} = \dfrac{1}{-\dfrac{1}{\sqrt{3}} \times \dfrac{4}{3}}$

$= \dfrac{-3\sqrt{3}}{4}$

۴)



$\dfrac{x}{5} = \dfrac{6}{10} \quad x = 3$



$h \to 4$

$\dfrac{(8+2)\,4}{2} = \boxed{20}$

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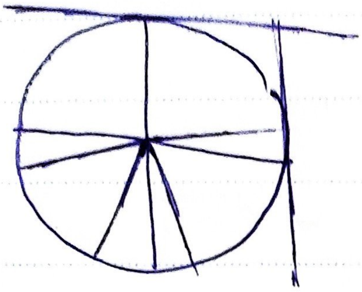
۵) $\tan(۲۸۵)\ \tan(-۱۶۵) - \sin(۱۰۹۵)\ Cos(۲۵۵۵)$



$- \cot(۱۵) \times \tan(۱۵) - (\sin_{۱۸۰} \cdot - \sin_{۱۵})$

$-۱ + \sin^{۲}_{۱۵} = - Cos^{۲}_{۱۵}$ ۵

$- Cos^{۲}_{۱۵} = k\ Cos^{۲}_{۱۵}$

$k = -۱$

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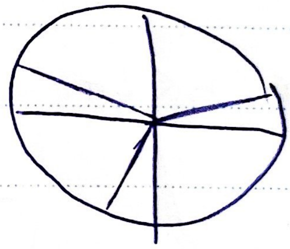
۶) $\sqrt{۳}\ Cos(۲۱۰)\ \sin(۳۴۳) - \sqrt{۲}\ \sin(۲۳۵)\ Cos(۱۵۳)$ ۵

$\sqrt{۳} \times - \frac{\sqrt{۳}}{۲} \times - Cos(۲۷) - (\sqrt{۲} \times \frac{\sqrt{۲}}{۲} \times - Cos(۲۷))$

$\frac{۳}{۲} Cos(۲۷) + Cos(۲۷) = \frac{۵}{۲}\ Cos_{۲۷}$



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۷) $۱۶\ Cos^{۲}(۳x) \times Cos^{۲}(۹x) \times Cos^{۲}(۱۳x)\ Cos^{۲}(۳۹x)$

$x = \frac{\pi}{۳۶}$

$Cos^{۲}(\frac{\pi}{۴}) = \frac{۳}{۴}$ $Cos^{۲}(\frac{\pi}{۳}) = \frac{۱}{۴}$ $Cos^{۲}(\frac{۲\pi}{۳}) = \frac{۱}{۴}$

$Cos^{۲}(\frac{\pi}{۱۲}) = \frac{۱ - Cos(\frac{\pi}{۶})}{۲} = \frac{۲ - \sqrt{۳}}{۴}$ ۱,۷۵

$۱۶ \times \frac{۲ + \sqrt{۳}}{۴} \times \frac{۳}{۴} \times \frac{۱}{۴} \times \frac{۱}{۴} = \frac{۶ + ۳\sqrt{۳}}{۱۶}$

تاریخ / /

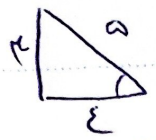
موضوع:

(۱) $1 - \sin\alpha = 4 + 4\sin\alpha \rightarrow 5\sin\alpha = -3$

$\sin\alpha = -\frac{3}{5}$

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

$\tan\alpha = +\frac{3}{4}$



$3 - 3\tan^2\frac{\alpha}{2} = 8\tan\frac{\alpha}{2}$

$3\tan^2\frac{\alpha}{2} + 8\tan\frac{\alpha}{2} - 3 = 0 \rightarrow \tan^2\frac{\alpha}{2} + 8\tan\frac{\alpha}{2} - 9$

$(\tan + 9)(\tan - 1)$

$\tan\frac{\alpha}{2} = -3$ ✗

$\tan\frac{\alpha}{2} = 1$ ✓

$\frac{\alpha}{2}$ ربع اول

$\tan \rightarrow +$

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(۹) $\frac{\sin\theta}{1-\cos\theta} + \frac{1+\cos\theta}{\sin\theta} = \frac{1}{\tan\frac{\theta}{2}} + \frac{1}{\tan\frac{\theta}{2}}$

$= 2\cot\frac{\theta}{2} + 4\cot\frac{\theta}{2} \rightarrow k = 2$

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(۱۰) $\cos\left(\frac{11\pi}{4} + \alpha\right) = \cos\left(2\pi + \alpha - \frac{3\pi}{4}\right) = -\sin\left(\alpha - \frac{3\pi}{4}\right)$

$= \sin\left(\frac{3\pi}{4} - \alpha\right) = \sin\frac{3\pi}{4}\cos\alpha - \cos\frac{3\pi}{4}\sin\alpha$

$= \frac{\sqrt{2}}{2} \times \frac{\sqrt{98}}{10} - \frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{10} = \frac{14}{20} - \frac{2}{10} = \frac{11}{20}$

$= \frac{3}{5}$

* $\sin^2 + \cos^2 = 1$

$\frac{2}{100} + \cos^2 = 1$

$\cos = \frac{\sqrt{98}}{10}$