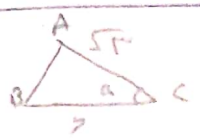
یازدهم پسرها

تکلیف ۲۷

امیرمحمد فروجانی

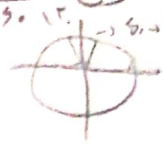


$S=\frac{1}{2}ab\sin a \to \frac{1}{2}\times\sqrt{2}\times\frac{4}{3}\times\sin a=4/5$

$3\sqrt{2}$

$4/5 \to \sin a=\frac{\sqrt{2}}{3}$

$\frac{a_{max}}{a_{min}}=? \quad \frac{120}{60}=2$



$\to \sin a=\frac{\sqrt{2}}{3}$

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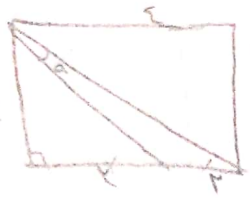
$\cot a=?$



$\cot(a+\frac{\pi}{4})=\frac{1-\tan a}{1+\tan a}=\frac{1}{3}$

$\cot(\frac{\pi}{4}+a)=\frac{2}{4}=\frac{1}{2}$

$1+\tan a=2(1-\tan a) \to 1=3\tan a \to \tan a=\frac{1}{3}$

$\cot a=3$

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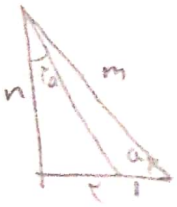
$\cot a=?$



$\tan a=\frac{n}{3+1}=\frac{n}{4}$

$\tan 2a=\frac{2}{n}$

$\frac{2}{n}=\frac{2n}{4-n^2} \to 1-(\frac{n^2}{9}) \to n=1 \to 5=\frac{3}{4}$

$\tan a=\frac{1}{2}$

$\cot a=2$

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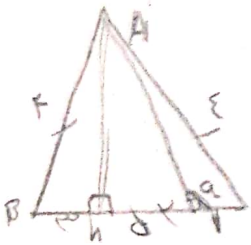
$\tan a=?$



$\tan a=\frac{-Ah}{4}\sqrt{7}$

$Ah^2=7 \to Ah=\sqrt{7}$

$-\frac{\sqrt{7}}{4}$

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$2\sin^2 x+\cos^2 x=\frac{5}{3}$

$1-\sin^2 x$

$\tan^2 x=?$

$\sin^2 x+\cos^2 x=1 \to 1-\sin^2 x=\cos^2 x$

$\sin^2 x+\sin^2 x+\cos^2 x=\frac{5}{3} \to \sin^2 x=\frac{5}{3}-1 \to \sin^2 x=\frac{1}{3} \to \sin x=\frac{1}{\sqrt{3}}=\frac{\sqrt{3}}{3}$

$\tan x=\frac{1}{\sqrt{3}}$

$\sin^2 x+\frac{\sqrt{3}}{3}+\cos^2 x=1$

$1+\cot^2 x=\frac{1}{\sin^2 x} \to 1+\cot^2 x=3 \to \cot^2 x=2 \to \cot x=\sqrt{2}$

$\tan^2 x=\frac{1}{2}$

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$\frac{\sin^2 a+4\cos^2 a}{1+\cos^2 a}-\frac{\cos^2 a+4\sin^2 a}{1+\sin^2 a} \to \sin^2 x+\cos^2 x=1$

$\frac{\sin^2 x+4(1-\sin^2 x)}{1+1-\sin^2 x}-\frac{\cos^2 x+4(1-\cos^2 x)}{1+1-\cos^2 x} \to$

اتحاد $\to \frac{(2-\sin^2 x)^2}{2-\sin^2 x}-\frac{(2-\cos^2 x)^2}{2-\cos^2 x} \to 2-\sin^2 x-2+\cos^2 x \to \cos^2 x-\sin^2 x \to \cos 2x$

Scanned with CamScanner

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$\tan a = \frac{k}{3}$ $\sin(\frac{9\pi}{2}+a)\cos(\frac{7\pi}{2}-a)-\tan(a-\frac{3\pi}{2})$ $\cos a = -\frac{3}{5}$

$\sin a = -\frac{4}{5}$

$\cos a \times -\sin a - (-\cot a) \to -\sin a\cos a + \cot a$

$-(-\frac{4}{5}\times-\frac{3}{5}) + \frac{3}{4} \to -\frac{12}{25}+\frac{3}{4} \to \frac{-48+75}{100} = \frac{27}{100}$ $\cot a = \frac{3}{4}$

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$(3\cos 4x + \sqrt{3}\sin x - \sqrt{3}\cos x)$ $x=\frac{\pi}{12}$

$3\cos\frac{\pi}{3} + \sqrt{3}\sin\frac{\pi}{12} - \sqrt{3}\cos\frac{\pi}{12} \to 3\cos\frac{\pi}{3} + \sqrt{3}\sin(\frac{\pi}{4}-\frac{\pi}{6}) - \sqrt{3}\cos(\frac{\pi}{4}+\frac{\pi}{6})$

$\frac{1}{2}$ $\frac{\sqrt{6}-\sqrt{2}}{4}$ $\frac{\sqrt{6}+\sqrt{2}}{4}$

$\cos 75^\circ = \cos 15^\circ$

$\frac{3}{2} + \sqrt{3}(\frac{\sqrt{6}-\sqrt{2}}{4} - \frac{\sqrt{6}+\sqrt{2}}{4}) \to \frac{3}{2} + \sqrt{3}(-\frac{\sqrt{2}}{2}) \to \frac{3}{2} - 1 \to \frac{1}{2}$

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$\tan(\frac{a}{2}) = \frac{1}{4}$ $\frac{\tan a - \sin a}{\sin a - \cos a} = ?$

$1+\tan^2 a = \frac{1}{\cos^2 a} \to \frac{17}{16} = \frac{1}{\cos^2 a} \to \cos^2 a = \frac{4}{17}$

$\frac{16}{17} + \sin^2 a = 1 \to \sin^2 a = 1 - \frac{16}{17} \to \sin a = \frac{1}{\sqrt{17}}$

$\frac{\sin a(1-\cos a)}{\cos a}$ $\frac{1}{\sqrt{17}}$ $\frac{4}{\sqrt{17}}$ $\frac{4}{17}\times\frac{\sqrt{17}}{4}$ $\frac{\sqrt{17}}{17}$

$\div \sin a - \cos a$ $\frac{1}{\sqrt{17}} - \frac{4}{\sqrt{17}}$

$\frac{\sqrt{17}}{17} \div \frac{-3}{\sqrt{17}} \to -\frac{\sqrt{17}}{3} \times -\frac{\sqrt{17}}{17} \to \frac{17}{51} \to \frac{1}{3}$

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$2\sin a < \sin 2a$ $\frac{\cot a}{\sin a} > 0$ نیم ۴

$\frac{\cos x}{\sin x} \times \frac{1}{\sin x} \to \frac{\cos x}{\sin^2 x} > 0 \to \cos x > 0 \to$ ربع ۱

$2\sin a < \sin 2a \to \sin a(1-\cos a) > 0 \to \sin a < 0$