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

۱۹٫۵

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$$S = \frac{1}{2} \times 4 \times \sqrt{3} \times \sin\alpha = \frac{9}{2} \Rightarrow \sin\alpha = \frac{9}{2} \times 12 \times \frac{1}{4\sqrt{3}} \Rightarrow \begin{cases} \alpha = 120^\circ \\ \alpha = 60^\circ \end{cases}$$

$$\frac{max}{min} = 2$$

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$$\tan(\alpha + 45^\circ) = \frac{\tan\alpha + 1}{1 - \tan\alpha} \overset{\tan 45^\circ = 1}{=} 2 \Rightarrow \cot\alpha = 3$$

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$$\cot\alpha = \frac{3}{y} \qquad \cot 2\alpha = \frac{\cot^2\alpha - 1}{2\cot\alpha} = 0/2 \Rightarrow 9 - y^2 = 3y^2$$

$$y = 3/2$$

$$\cot\alpha = 2$$

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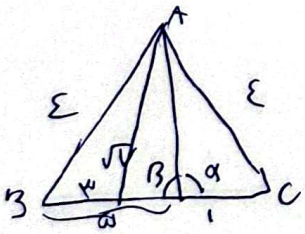
$$\tan\alpha = -\tan\beta = -\sqrt{0/2}$$



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$$3\sin^2\alpha + \cos^2\alpha = 3/2 \xrightarrow{+\cos^2\alpha} 3\sin^2\alpha + 2\cos^2\alpha - \cos^2\alpha = 3/2$$

$$\tan^2\alpha = 1/2 \leftarrow \qquad \cos^2\alpha = \frac{2}{3} \qquad \sin^2\alpha = \frac{1}{3}$$

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$$\frac{\sin^2\alpha+\cos^4\alpha}{1+\cos^2\alpha}-\frac{\cos^2\alpha+\sin^2\alpha-1}{1+\sin^2\alpha}\Rightarrow \frac{1-\sin^2\alpha}{1+\cos^2\alpha}=\frac{\cos^2\alpha}{1+\cos^2\alpha}$$

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$\tan\alpha=\frac{1}{3}$ $\quad \pi<\alpha<\frac{3\pi}{2}$ $\quad \sin(\frac{9\pi}{2}+\alpha)\cos(\frac{5\pi}{2}-\alpha)-\tan(\alpha-\frac{3\pi}{2})$

$1+\tan^2\alpha=\frac{1}{\cos^2\alpha}$ $\quad 1+\frac{1}{9}\Rightarrow \sin\alpha=\frac{3}{\sqrt{10}}$ $\quad \frac{-12}{\sqrt{10}}+\frac{1}{3}=\frac{-36+\sqrt{10}}{30}$

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$3\cos\alpha+\sqrt{3}\sin\alpha-\sqrt{3}\cos\alpha\Rightarrow\sqrt{3}\sin\alpha-\sqrt{3}\cos\alpha-1+1=0$

$\sqrt{2}\sin(\frac{\pi}{3}-\frac{\pi}{4})=\sin\frac{\pi}{3}-\cos\frac{\pi}{3}\rightarrow\sqrt{2}\cos\frac{\pi}{12}=\sqrt{2}\sin\frac{\alpha\pi}{12}$

$\sin\frac{\pi}{4}\cos\frac{\pi}{3}+\sin\frac{\pi}{3}\cos\frac{\pi}{4}$

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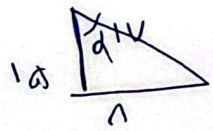
$\tan(\frac{\alpha}{2})=\frac{1}{3}$ $\quad \frac{\tan\alpha-\sin\alpha}{\sin\alpha-\cos\alpha}$



$\tan\alpha=\tan(\frac{\pi}{4}+\frac{\alpha}{2})=\frac{\frac{1}{3}+\frac{1}{3}}{1-\frac{1}{9}}=\frac{3}{4}$ $\quad \frac{\frac{8}{15}-\frac{8}{17}}{\frac{64}{17}-\frac{120}{17}}=\frac{16}{-100}$

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$3\sin\alpha<3\sin\alpha\cos\alpha$

$\sin\alpha<0\rightarrow\cos\alpha<1\Rightarrow\sin\alpha<0$

$\sin\alpha>0\rightarrow\cos\alpha>1$ غ ق ق

$\frac{\cos\alpha}{\sin^2\alpha}>0\Rightarrow\cos\alpha>0$

قابل قبول