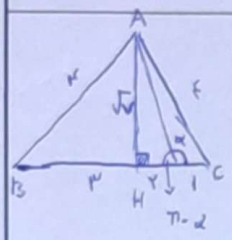
نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۲۷ کلاس .....

۱

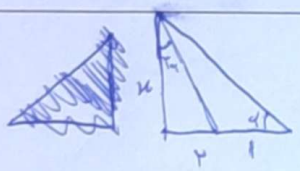
$$\frac{1}{2}\times 4\times\sqrt{3}\times\sin\alpha = 6/\omega \to \sin\alpha = \frac{9}{4\sqrt{3}} = \frac{\sqrt{3}}{2} \to \sin\alpha = \frac{\sqrt{3}}{2}\begin{cases}\alpha = \frac{\pi}{3}\\ \alpha = \frac{2\pi}{3}\end{cases} \Rightarrow \frac{\alpha_{max}}{\alpha_{min}} = \frac{\frac{2\pi}{3}}{\frac{\pi}{3}} = 2$$

۴



$$\tan(\pi-\alpha) = \frac{\sqrt{7}}{2} \Rightarrow -\tan\alpha = \frac{\sqrt{7}}{2} \Rightarrow \tan\alpha = -\frac{\sqrt{7}}{2}$$

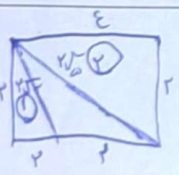
۳



$$\to \tan 2\alpha = \frac{1}{4} \to \tan\alpha = \frac{4}{2} \to \tan 4\alpha = \frac{4}{3} = \frac{2\tan 2\alpha}{1-\tan^2 2\alpha} \to \frac{2}{3} = \frac{\frac{8}{3}}{1-\frac{16}{9}} \to$$

$$18k^2 = 36 - 8k^2 \to 26k^2 = 36 \to k = \frac{6}{\sqrt{13}} \to \cot\alpha = \frac{\frac{6}{\sqrt{13}}}{\frac{4}{\sqrt{13}}} = 2$$

۴



$$\to \begin{matrix}S_1 = 2\\ S_2 = 4\\ S_3 = 8\end{matrix} \to S_{\text{ذوزنقه}} = 2 \to \frac{1}{2}\times 2\sqrt{2}\times 2\sqrt{5}\times\sin\alpha = 2 \to \sin\alpha = \frac{\sqrt{10}}{10}$$

$$\to \begin{matrix}10\\ \alpha\\ 3\sqrt{10}\end{matrix}\ \sqrt{10} \to \cot\alpha = \frac{3\sqrt{10}}{\sqrt{10}} = 3$$

۵

$$2\sin^2\alpha + \cos^2\alpha = \frac{6}{5} \xrightarrow{\div\cos^2\alpha} 2\tan^2\alpha + 1 = \frac{6}{5}\cdot\frac{1}{\cos^2\alpha} \to 2\tan^2\alpha + 1 = \frac{6}{5}(1+\tan^2\alpha) \xrightarrow{\times 5} 10\tan^2\alpha + 5 = 6 + 6\tan^2\alpha$$

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

Scanned with CamScanner

۶

$\sin^4 = (1-\cos^2)^2 = \cos^4 - 2\cos^2 + 1$

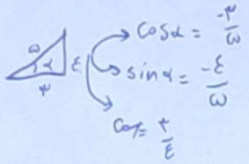
$\cos^4 = (1-\sin^2)^2 = \sin^4 - 2\sin^2 + 1$

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

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

۷

$\rightarrow \sin\left(\frac{\pi}{2}+\alpha\right)\cos\left(\frac{3\pi}{2}-\alpha\right) + \tan\left(\frac{3\pi}{2}-\alpha\right) \rightarrow \cos(-\sin) + \cot(\alpha) \rightarrow \frac{-3}{5}\times\frac{4}{5} + \frac{3}{4} = \frac{27}{100} = 0.27$

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

۸

$3\cos 60 + \sqrt{2}(\sin - \cos) \rightarrow 3\cos 60 + \sqrt{2}\left(\sqrt{2}\sin\left(\alpha - \frac{\pi}{4}\right)\right) \rightarrow 3\cos\frac{\pi}{3} + 2\sin\left(-\frac{\pi}{4}\right) \rightarrow \frac{3}{2} - 1 \rightarrow \frac{1}{2}$

($\cos\frac{\pi}{3} = \frac{1}{2}$, $\sin\left(-\frac{\pi}{4}\right) = \frac{-1}{2}$)

۹

$\tan\alpha = \frac{2\tan\frac{\alpha}{2}}{1-\tan^2\frac{\alpha}{2}} = \frac{8}{10} \rightarrow 1+\tan^2 = \frac{1}{\cos^2} \rightarrow 1 + \frac{64}{225} \rightarrow \cos\alpha = \frac{10}{17} \rightarrow \sin = \frac{8}{17}$

$\rightarrow \frac{\frac{8}{10} - \frac{8}{17}}{\frac{8}{17} - \frac{10}{17}} = \frac{-14}{10}$

۱۰

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

$\Rightarrow$ زاویه حاده

$2\sin\alpha < \sin 2\alpha \Rightarrow 2\sin\alpha < 2\sin\cos\alpha \Rightarrow 2\sin\alpha\,(1-\cos\alpha) < 0 \rightarrow \sin\alpha < 0$ (+)

Scanned with CamScanner