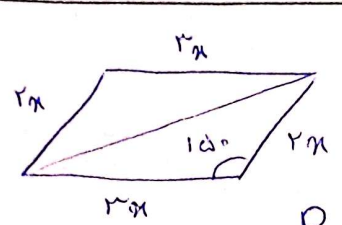


نام و نام خانوادگی پستی پاسخنامه تشریحی تکلیف شماره ۱۸... کلاس A	
الف) $\tan \frac{3\pi}{4} + \sin \frac{5\pi}{4} \cos \frac{3\pi}{4} = -1 + \left(-\frac{\sqrt{2}}{2}\right) \times \left(-\frac{\sqrt{2}}{2}\right) = \left[-\frac{1}{2}\right] \checkmark$ ب) $\tan \frac{5\pi}{4} \times \sin \frac{3\pi}{4} + \cos \frac{3\pi}{4} = -\frac{\sqrt{2}}{2} \times \left(-\frac{\sqrt{2}}{2}\right) + \left(-\frac{1}{2}\right) = \frac{1}{2} - \frac{1}{2} = 0 \checkmark$	۱
$\frac{\cos x}{\sin x} = \frac{4}{1} \Rightarrow \begin{cases} \cos x = 4k \\ \sin x = k \end{cases} \Rightarrow \frac{3\cos x - \sin x}{\cos x + \sin x} = \frac{12k - k}{4k + k} = \left[\frac{11}{5}\right] \checkmark$	۲
$\frac{\sin \alpha}{\cos \alpha} = 2 \Rightarrow \frac{\sqrt{5}}{1} \quad 2 \quad \cos \alpha = \frac{1}{\sqrt{5}} = \frac{\sqrt{5}}{5}$ $\Rightarrow \cos \alpha = -\frac{\sqrt{5}}{5} \checkmark$	۳
الف) $\begin{cases} \sin \alpha = \frac{\sqrt{2}}{10} \\ \cos \alpha = -\frac{\sqrt{18}}{10} \end{cases} \Rightarrow \cos \left(\frac{11\pi}{4} + \alpha\right) = \cos \frac{11\pi}{4} \cos \alpha - \sin \frac{11\pi}{4} \sin \alpha$ $= -\frac{\sqrt{2}}{2} \times \left(-\frac{\sqrt{18}}{10}\right) - \frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{10} = \frac{1}{10} - \frac{1}{10} = \frac{0}{10} = \left[\frac{1}{5}\right] \checkmark$ ب) $\begin{cases} \sin \alpha = \frac{1}{5\sqrt{2}} \\ \cos \alpha = \frac{4}{5\sqrt{2}} \end{cases} \Rightarrow \sin \left(\frac{11\pi}{4} + \alpha\right) = \sin \frac{11\pi}{4} \cos \alpha + \cos \frac{11\pi}{4} \sin \alpha$ $= -\frac{\sqrt{2}}{2} \times \frac{4}{5\sqrt{2}} + \left(-\frac{\sqrt{2}}{2}\right) \times \frac{1}{5\sqrt{2}} = \frac{-4}{10} - \frac{1}{10} = \frac{-5}{10} = \left[-\frac{1}{2}\right] \checkmark$	۴
$\sin^2 x + (\sin^2 x + \cos^2 x) = 1 + \frac{1}{3} \Rightarrow \sin^2 x = \frac{1}{3}$ $\cos^2 x = 1 - \sin^2 x = 1 - \frac{1}{3} = \frac{2}{3}$ $\tan^2 x = \frac{\sin^2 x}{\cos^2 x} = \frac{\frac{1}{3}}{\frac{2}{3}} = \left[\frac{1}{2}\right] \checkmark$	۵

$$S_{ABC} = \frac{r \times \sqrt{3}}{r} \times \sin \alpha = r, \omega \Rightarrow \sin \alpha = \frac{\sqrt{3}}{r} \Rightarrow \alpha = \begin{cases} 120^\circ \leftarrow \text{Max} \\ 40^\circ \leftarrow \text{Min} \end{cases}$$

$$\frac{\text{Max}}{\text{Min}} = \frac{120}{40} = 3 \quad \left(\frac{3}{1} \right) \checkmark$$



$$S = \left(\frac{r \times r}{r} \times \sin 120^\circ \right) \times r = \frac{r \times r}{r} = \omega r$$

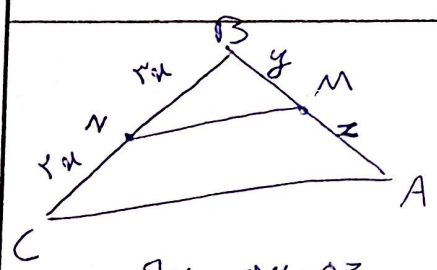
$$r = 1 \Rightarrow r, \sqrt{1} \Rightarrow r = r\sqrt{3}$$

$$P = 1 \cdot r = (r\sqrt{3}) \checkmark$$

$$S_{ABC} - S_{ADE} = 1, \omega \Rightarrow \frac{\omega \times V}{r} \sin \hat{A} - \frac{r \times V}{r} \sin \hat{A} = \frac{V}{r} \Rightarrow \sin \hat{A} = \frac{1}{r}$$

$$\Rightarrow \hat{A} = \begin{cases} 120^\circ \\ 120^\circ \text{ و } 40^\circ \end{cases} \Rightarrow \tan \hat{A} = \frac{\sqrt{3}}{r} \checkmark \leftarrow \text{بایستی}$$

(حداکثر)



$$\frac{S_{ABC}}{S_{BMW}} = \frac{\frac{\omega \times (y+z)}{r} \sin \hat{B}}{\frac{r \times y}{r} \sin \hat{B}} = r$$

$$9y = \omega y + \omega z \Rightarrow \frac{BM}{AM} = \frac{y}{z} = \frac{\omega}{r} \checkmark$$

$\boxed{ry = \omega z}$

$$\frac{|\sin \alpha|}{\cos \alpha} = -\frac{\sin \alpha}{\cos \alpha} \Rightarrow \sin \alpha < 0 \quad \left| \frac{1}{|\cos \alpha|} - \frac{\sin \alpha}{\cos \alpha} = \frac{1 + \sin \alpha}{|\cos \alpha|} \right|$$

$$= \frac{1}{|\cos \alpha|} \left(+ \frac{\sin \alpha}{|\cos \alpha|} \right) = \frac{1}{|\cos \alpha|} \left(- \frac{\sin \alpha}{\cos \alpha} \right) \Rightarrow \cos \alpha < 0 \quad \star$$

$\star$ و $\star \Rightarrow$ استرالکین α در $\frac{\pi}{2}$ قرار دارد
($r = \text{مولى}$)