زهرا حیدری / یازدهم ریاضی / تکلیف ۲۶

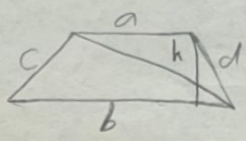
بسمه تعالی

تاریخ : .....
شماره : .....
پیوست : .....

موسسه مالی و اعتباری ثامن الحجج (ع)

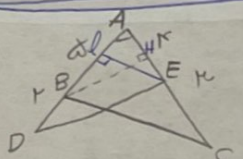
(تحت نظارت بانک مرکزی)

۱- ✗



$\frac{(a+b)h}{2} = 25$

۲- ✗



$S_{ABC} - S_{ADE} = 1/75$

$\frac{BH}{AH} = \frac{lE}{Al}$

$7 \times lE - 7 \times BH = 3/5$

$7(lE - BH) = 3/5 \rightarrow lE - BH = \frac{1}{2}$

$lE = BH + \frac{1}{2}$

۳-

$\frac{1}{|\cos\alpha|} - \frac{\sin\alpha}{\cos\alpha} = \frac{1+\sin\alpha}{|\cos\alpha|} \rightarrow \cos - \sin = 1 + \sin\alpha$

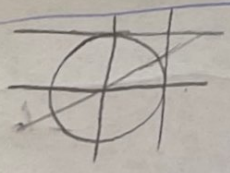
$2\sin\alpha = \cos\alpha - 1 \rightarrow \boxed{\cos\alpha > 0}$

نتیجه: ۱ یا ۴

$\frac{|\sin\alpha|}{\cos\alpha} = \frac{-\sin\alpha}{\cos\alpha} \rightarrow \boxed{\sin\alpha < 0} \rightarrow$ ۳ یا ۴

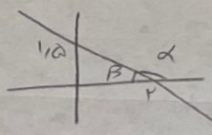
نتیجه: ۴

۴-



$\tan\alpha = \tan(\pi + \alpha)$

$\tan\alpha = -\tan(\pi - \alpha)$



$\tan\beta = -\tan\alpha$

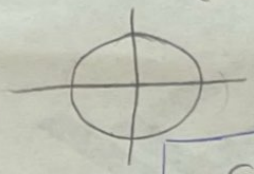
$\tan\beta = \frac{1/5}{2} = \boxed{0/75}$

$\boxed{\tan\alpha = -0/75}$

$\Rightarrow \tan(\frac{\pi}{2} - \alpha) = +\cot\alpha \rightarrow \boxed{\cot\alpha = -\frac{4}{3}}$

-۵

$$\frac{۳\cos\left(\frac{۳\pi}{۲}-۲۲^\circ\right)-۲\sin(\pi-۴^\circ)}{\sin(\pi+۴^\circ)-\cos\left(\frac{۳\pi}{۲}+۲۲^\circ\right)}=\frac{-۳\sin۴-۲\sin۲۲}{-\sin۲۲-\sin۴۴}=\frac{-۵\sin۲۲^\circ}{-۲\sin۲۲^\circ}=\boxed{\frac{۵}{۲}}$$



-۶

$$\cos\alpha=\frac{۲}{۳}\rightarrow \sin^۲\alpha=۱-\cos^۲\alpha$$

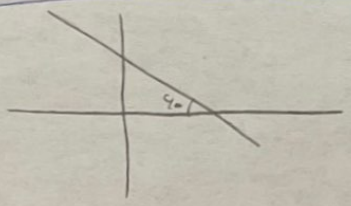
$$۱-\frac{۴}{۹}=\frac{۵}{۹}\rightarrow \sin\alpha=\frac{\sqrt{۵}}{۳}\rightarrow \tan\alpha=\frac{\frac{\sqrt{۵}}{۳}}{\frac{۲}{۳}}=\frac{\sqrt{۵}}{۲}$$

$$\frac{+\cos\alpha+\sin\alpha}{|\tan^۲-۱|}=\frac{\frac{-\sqrt{۵}}{۳}+\frac{۲}{۳}}{\frac{۱}{۲}}=\frac{۴(۲-\sqrt{۵})}{۳}=\boxed{\frac{۸-۴\sqrt{۵}}{۳}}$$

-۷

$$\sin\alpha=۲\cos\alpha\rightarrow \sin^۲\alpha+\cos^۲\alpha=۱\rightarrow ۵\cos^۲\alpha=۱\rightarrow \boxed{\cos\alpha=\frac{-۱}{\sqrt{۵}}}$$

-۸



$$(m^۲-۱)y=-۲mx+۲\rightarrow y=\frac{-۲m}{m^۲-۱}x+\frac{۳}{m^۲-۱}$$

$$\tan۹۰=\sqrt{۳}=\frac{-۲m}{m^۲-۱}\rightarrow -۹m=\sqrt{۳}m^۲-\sqrt{۳}$$

$$\sqrt{۳}m^۲+۹m-\sqrt{۳}=۰$$

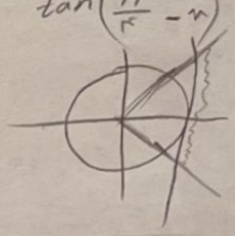
$$\frac{-۳\pm۲\sqrt{۳}}{\sqrt{۳}}\rightarrow \frac{-۳+۲\sqrt{۳}}{\sqrt{۳}}=-\sqrt{۳}+۲=m_۱$$

$$\frac{-۳-۲\sqrt{۳}}{\sqrt{۳}}=-\sqrt{۳}-۲=m_۲$$

$$m^۲+۹m-۳=۰\rightarrow \frac{-۹\pm\sqrt{۹۴+۱۲}}{۲}=-۳\pm۲\sqrt{۳}\quad(\sqrt{۲۸}=۲\sqrt{۷})$$

$$m_۱-m_۲=۲-\sqrt{۳}+۲+\sqrt{۳}=\boxed{۴}$$

-۹



$$\tan\left(\frac{\pi}{۴}-\alpha\right)=\frac{۱-m}{m+۲}$$

$$\alpha=\frac{-\pi}{۴}\rightarrow \tan\frac{\pi}{۲}=\text{تعریف نشده}$$

$$\alpha=\frac{\pi}{۴}\rightarrow \tan۰=۰$$

$$\alpha=۰\rightarrow \tan\frac{\pi}{۴}=۱$$

$$\boxed{\frac{-۱}{۲}<m<۱}$$

$$۰<\frac{۱-m}{m+۲}<۱$$

$$\frac{-۱}{۲}<m$$

$$۱-m<m+۲\rightarrow -۱<۲m$$

$$۰<۱-m\rightarrow m<۱$$

-۱۰

$$\tan\left(\frac{۲\pi}{۲}+۳۰^\circ\right)\cos(\pi+۳۰^\circ)+\tan\left(\frac{۵\pi}{۲}+۳۰^\circ\right)\sin\left(\frac{۹\pi}{۲}+۳۰^\circ\right)$$

$$(-\cot۳۰-\cos۳۰)+(-\cot۳۰+\cos۳۰)$$

$$\frac{\cos^۲۳۰}{\sin۳۰}-\frac{\cos^۲۳۰}{\sin۳۰}=\boxed{۰}$$