(۲۶) سارینا اسپنانی / یازدهم دختر C / شماره تلفن

(۱) $۳\sqrt{۲} \times ۳\sqrt{۲} \times \sin ۱۳۵^\circ = ۵۴$

$\frac{۹x^۲}{۲} = ۵۴$

$x^۲ = ۱۲ \rightarrow x = ۳\sqrt{۲}$

$P = ۴(۳\sqrt{۲}) + ۹(۳\sqrt{۲}) = ۱۰(۳\sqrt{۲}) = ۳۰\sqrt{۲}$

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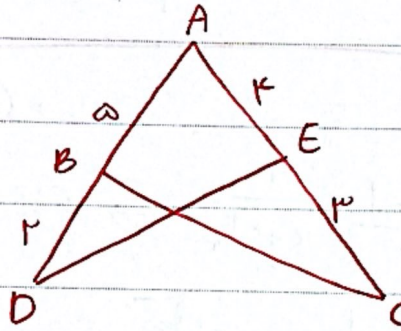
(۲)



$S_{ABC}^{\triangle} - S_{ADE}^{\triangle} = ۱,۷۵$

$S_{ABC}^{\triangle} = ۷ \times ۵ \times \sin A \times \frac{۱}{۲} = ۱۷,۵ \sin A$

$S_{ADE}^{\triangle} = ۷ \times ۴ \times \sin A \times \frac{۱}{۲} = ۱۴ \sin A$

$۱۷,۵ \sin A - ۱۴ \sin A = ۳,۵ \sin A = ۱,۷۵$

$\sin A = \frac{۱,۷۵}{۳,۵} = \frac{۱}{۲} \rightarrow A = ۳۰^\circ \rightarrow \tan A = \frac{\sqrt{۳}}{۳}$

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(۳) $\frac{|\sin a|}{\cos a} = -\frac{۱}{\cot a}$

$-\frac{۱}{\cot \alpha} = -\tan \alpha = \frac{-\sin \alpha}{\cos \alpha}$

$|\sin \alpha| = \cos \alpha \times \frac{-\sin \alpha}{\cos \alpha}$ (۲)

$\sin \alpha < ۰$ ناحیه سوم یا چهارم

(۴) $\frac{۱}{\sqrt{\cos^۲ a}} - \tan a = \frac{۱+\sin a}{|\cos a|}$ ناحیه سوم

(۳) تا (۱) ناحیه

$\frac{۱}{|\cos a|} - \tan a = \frac{۱}{|\cos a|} + \frac{\sin a}{|\cos a|}$

$-\tan \alpha < ۰ \rightarrow \boxed{\tan \alpha > ۰}$

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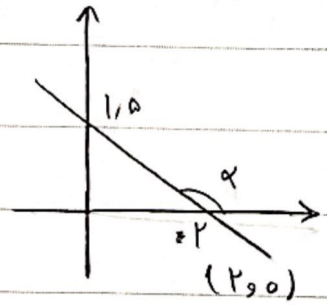
(۴)



$\tan(\frac{\pi}{۲} - \alpha) = \cot a = \frac{۱}{\frac{-۳}{۴}} = \frac{-۴}{۳}$

$y = ax + b \rightarrow ۲a + ۱,۵ = ۰$

$b = ۱,۵$ $\quad ۲a = -۱,۵$

$a = -۰,۷۵$

$y = \frac{-۳}{۴}x + ۱,۵ \rightarrow \tan a = \frac{-۳}{۴}$

Subo

$\cos\alpha = \frac{2}{3}$ ربع اول

$\cos^2\alpha + \sin^2\alpha = 1 \rightarrow \sin^2\alpha = \frac{5}{9}$ (۴)

$\sin\alpha = \frac{\sqrt{5}}{3}$

$$\frac{\sin(\frac{\pi}{2}+\alpha) - \sin(\alpha-\pi)}{|\tan^2\alpha - 1|} = \frac{\cos\alpha - \sin\alpha}{|\tan^2\alpha - 1|} = \frac{\frac{2}{3} - \frac{\sqrt{5}}{3}}{\frac{5}{4} - \frac{4}{4}} = \frac{\frac{2-\sqrt{5}}{3}}{\frac{1}{4}}$$

$$\frac{8-4\sqrt{5}}{3}$$

$\sin\alpha = 2\cos\alpha$ ربع سوم (۷)

$\tan\alpha = \frac{2\cos\alpha}{\cos\alpha} = 2$

$\frac{\tan^2\alpha + 1}{5} = \frac{1}{\cos^2\alpha} \rightarrow \cos^2\alpha = \frac{1}{5}$

$\cos\alpha = -\frac{1}{\sqrt{5}} = -\frac{\sqrt{5}}{5}$

$\alpha = 60^\circ \rightarrow \tan 60^\circ = \sqrt{3}$ (۸) $2mx + (m^2-1)y = 2$

$|m_1 - m_2| = \left|\frac{-2}{\sqrt{3}} - \frac{-1}{\sqrt{3}}\right| = \frac{2}{\sqrt{3}}$

$y = -\frac{2mx+3}{m^2-1} \rightarrow \frac{-2m}{m^2-1} = \sqrt{3}$

$\sqrt{3}m^2 - \sqrt{3} = -2m \rightarrow m^2 + 2m - 3 = 0 \rightarrow (m+3)(m-1) = 0$

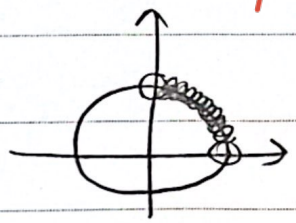
$m_1 = \frac{-3}{\sqrt{3}}$ $m_2 = \frac{1}{\sqrt{3}}$

$$\tan\left(\frac{\pi}{4}-x\right)=\frac{1-m}{2+m} \quad , \quad -\frac{\pi}{4}<x<\frac{\pi}{4} \qquad (9)$$

$$\frac{\pi}{4}>-x>-\frac{\pi}{4} \longrightarrow 0<\frac{\pi}{4}-x<\frac{\pi}{2}$$

$$\longrightarrow 0<\frac{1-m}{2+m}<+\infty \longrightarrow 0<\frac{1-m}{2+m}$$

$$\begin{array}{c|c|c} -2 & 1 & \\ \hline - & + & - \end{array} \longrightarrow (-2,1)$$



$$\tan(200^\circ)\cos(110^\circ)+\tan(140^\circ)\sin(150^\circ) \qquad (10)$$

$$\tan(200^\circ)=\tan\left(2\pi-\frac{\pi}{3}\right)=-\tan\frac{\pi}{3}=-\sqrt{3}$$

$$\cos(110^\circ)=\cos\left(\pi+\frac{\pi}{4}\right)=-\cos\frac{\pi}{4}=\frac{-\sqrt{2}}{2}$$

$$\tan(140^\circ)=\tan\left(\frac{5\pi}{2}+\frac{\pi}{4}\right)=-\cot\frac{\pi}{4}=-\sqrt{2}$$

$$\sin(150^\circ)=\sin\left(3\pi-\frac{\pi}{6}\right)=\sin\frac{\pi}{6}=\frac{\sqrt{2}}{2}$$

$$-\sqrt{2}\times\frac{-\sqrt{2}}{2}+-\sqrt{2}\times\frac{\sqrt{2}}{2}=0$$

$$\frac{3\cos(2248^\circ) - 2\sin(1518^\circ)}{\sin(2020^\circ) - \cos(2192^\circ)} = \frac{-3\sin(22^\circ) - 2\sin(22^\circ)}{-\sin(22^\circ) - \sin(22^\circ)} = \frac{-5\sin(22^\circ)}{-2\sin(22^\circ)} = \frac{5}{2} = 2.5$$

(5)

$$\frac{3\cos\left(\frac{3\pi}{2} - 22^\circ\right) - 2\sin(\pi - 22)}{\sin(\pi + 22) - \cos\left(\frac{3\pi}{2} + 22^\circ\right)}$$

Subo