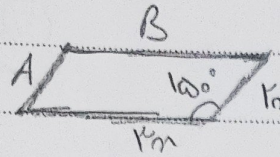
Subject:

Year: Month: Day: ۲۹ : ۹۷ ★ تالیف ترم کنکور ۱ page: ( )



$\rightarrow S_{\triangle} = 2m \times 3m \times \sin 120^\circ$ ①

$\rightarrow$ $a^2 = \frac{4}{3}m^2 \rightarrow m^2 = 18 \rightarrow m = 3\sqrt{2}$

$\rightarrow S_{\square} = 2(2 \times 3\sqrt{2}) + 2(3 \times 3\sqrt{2}) = 12\sqrt{2} + 18\sqrt{2} = 30\sqrt{2}$

$S_{ABC} - S_{ADE} = 10.5 \rightarrow (\frac{1}{2} \times 6 \times 7 \times \sin\hat{A}) - (\frac{1}{2} \times 4 \times 7 \times \sin\hat{A}) = 10.5$ ②

$\rightarrow 21\sin\hat{A} - 14\sin\hat{A} = \frac{7}{2} \rightarrow \sin\hat{A} = \frac{1}{2}$, $\hat{A} < 90^\circ \rightarrow \hat{A} = 30^\circ$

$\rightarrow \tan 30^\circ = \frac{\sqrt{3}}{3}$

$\frac{|\sin a|}{\cos a} = \frac{-1}{\cot a}$ ④

$\hookrightarrow \sin a < 0$

$\frac{1}{\sqrt{\cos^2 a}} - \tan a = \frac{1+\sin a}{|\cos a|}$ $\rightarrow$ $\frac{1}{|\cos a|} \frac{\sin a = 1}{\cos a} + \frac{\sin a}{|\cos a|}$ (صفر)

$\hookrightarrow \cos a < 0$

$m = \frac{10-0}{0-4} = \frac{-5}{2}$ $\rightarrow \tan a = -\frac{5}{2}$ ③

$\rightarrow \tan(\frac{\pi}{2} - a) = \cot a = -\frac{2}{5}$

$\frac{2\cos(\frac{5\pi}{2} - 22^\circ) - 2\sin(\pi - 22^\circ)}{\sin(\pi + 22^\circ) - \cos(\frac{5\pi}{2} + 22^\circ)} = \frac{-5\sin(22^\circ) - 2\sin(22^\circ)}{-\sin(22^\circ) - \sin(22^\circ)}$ ⑤

$= \frac{7}{2}$

$\frac{\sin(\frac{\pi}{2} + a) + \sin(\pi - a)}{\tan^2 a - 1} = \frac{\cos a + \sin a}{\tan^2 a - 1} = \cos^2 a(\cos a + \sin a)$ ⑥

$\rightarrow \sin^2 a = 1 - \frac{4}{9} \xrightarrow{\text{ربع دوم}} \sin a = -\frac{\sqrt{5}}{3} \rightarrow 4(2 - \sqrt{5}) = 8 - 4\sqrt{5}$

$\hookrightarrow \tan^2 a = \frac{5}{4}$

Arman

$\sin^2 a + \cos^2 a = 1 \rightarrow 5\cos^2 a = 1 \rightarrow |\cos a| = \frac{\sqrt{5}}{5} \xrightarrow{2^{nd}\,QU}$ (۷)

$\cos a = -\frac{\sqrt{5}}{5}$

$\tan 45^\circ = \frac{2}{1} = \sqrt{3} \rightarrow m_{1(y)}^2 = 3 - 2mn \rightarrow$ (۸)

$y = \frac{-2mn}{m^2-1} + 3 \rightarrow \sqrt{3} = \frac{-2m}{m^2-1} \rightarrow m^2\sqrt{3} + 2m - \sqrt{3} = 0 \rightarrow$

$D = \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{3+12}}{\sqrt{3}} = \frac{4}{\sqrt{3}} = \frac{4\sqrt{3}}{3}$ (اختیاری)

$-\frac{\pi}{4} < x < \frac{\pi}{4} \rightarrow -\frac{\pi}{4} < -x < \frac{\pi}{4} \rightarrow 0 < \frac{\pi}{4} - x < \frac{\pi}{2}$ (۹)

$\rightarrow \tan 0 < \tan\left(\frac{\pi}{4} - x\right) < \tan\frac{\pi}{2} \rightarrow 0 < \frac{1-m}{2+m} \rightarrow$ (با جدول)

$\rightarrow -2 < m < 1$

$\tan(360^\circ)\cos(210^\circ) + \tan(450^\circ)\sin(450^\circ) =$ (۱۰)

$-\sqrt{3} \times -\frac{\sqrt{3}}{2} + -\sqrt{3} \times \frac{\sqrt{3}}{2} = 0$