۱) $\tan\frac{11\pi}{6} + \sin\frac{15\pi}{6}\cos\frac{13\pi}{6} =$ ۱۳,۵ تابع تانژانت

$-1 + \left(\frac{-\sqrt{2}}{2} \times \frac{-\sqrt{2}}{2}\right) = -1 + \frac{1}{2} = \frac{-1}{2}$ ۱/۵

$\tan\frac{17\pi}{4}\sin\frac{11\pi}{3} + \cos\frac{10\pi}{3}$

$\frac{-\sqrt{3}}{3} \times \left(\frac{-\sqrt{3}}{2}\right) + \frac{\sqrt{3}}{2} = \frac{3}{6} + \frac{-\sqrt{3}}{2} = \frac{3-3\sqrt{3}}{6}$ (۰ − ۱ − ۱)/۲

۳) $\cot\alpha = 4$ $\frac{3\cos\alpha - \sin\alpha}{\cos\alpha + \sin\alpha} \xrightarrow{\div\sin\alpha} \frac{3\cot\alpha - 1}{\cot\alpha + 1} = \frac{11}{5}$

۴) $\sin\alpha = 2\cos\alpha$ $\cos\alpha = ?$ $\frac{2x}{\sqrt{5}x} = \frac{2\sqrt{5}}{5}$

$y = \sqrt{5}x$, $y^2 = 4x^2 + x^2 = 5x^2$

۰ ۱/۵

۵) $\sin\alpha = \frac{\sqrt{2}}{10}$ $\cos\left(\frac{11\pi}{4} + \alpha\right) = \cos\frac{11\pi}{4}\cos\alpha - \sin\frac{11\pi}{4}\sin\alpha$

$\cos\alpha = -\frac{\sqrt{98}}{10}$ ✓ $\frac{-\sqrt{2}}{2}$ $-\frac{\sqrt{2}}{2}\left(-\frac{\sqrt{98}}{10}\cdot\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{10}\right) = \frac{3}{5}$

$\frac{-\sqrt{2}}{2} \times \frac{-\sqrt{98}}{10} - \frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{10} = \frac{\sqrt{196}}{20} - \frac{2}{20} = \frac{\sqrt{196}-2}{20}$

۶) $\tan\alpha = \frac{1}{7}$ $\sin\left(\frac{13\pi}{4} + \alpha\right) = \sin\frac{13\pi}{4}\cos\alpha + \sin\alpha\cos\frac{13\pi}{4}$

$\frac{-\sqrt{2}}{2}\left(\frac{4}{\sqrt{50}}\right) = \frac{-4\sqrt{2}}{\sqrt{50}}$ $\frac{-\sqrt{2}}{2} \times \frac{7}{\sqrt{50}} + \frac{-\sqrt{2}}{2} \times \frac{1}{\sqrt{50}}$ ✓

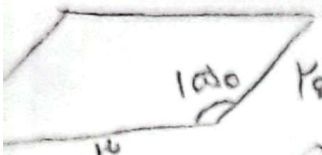
۷) $2\sin^2 x + \cos^2 x = \frac{4}{3}$

$\sin^2 x + \sin^2 x + \cos^2 x = \frac{4}{3} \rightarrow \sin^2 x = \frac{1}{3}$ $\sin x = \pm\frac{\sqrt{3}}{3}$

$\sin x = \pm\frac{\sqrt{3}}{3} \rightarrow \frac{1}{3} + \cos^2 x = \frac{4}{3}$ $\cos^2 x = \frac{3}{3}$ $\tan^2 x = \frac{\sin^2 x}{\cos^2 x} =$

$\frac{\frac{1}{3}}{\frac{3}{3}} = \frac{1}{3}$

$S_{\triangle} = \frac{1}{2} ab \sin\alpha \rightarrow$

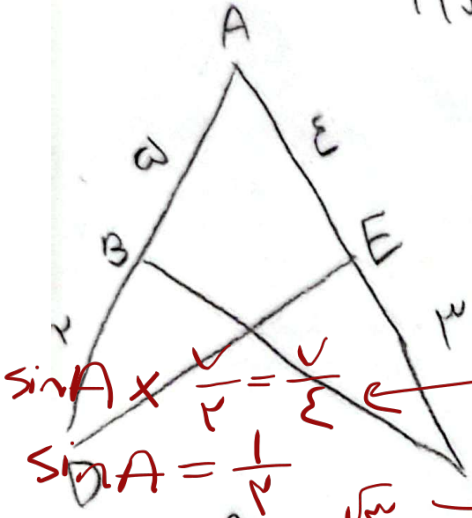


$S_{\square} = ab$

$۲x \times ۳x \times \sin ۱۵۰ = ab$

$P = ۲(۹\sqrt{۲}) + ۲(۹\sqrt{۲})$

$۱۴\sqrt{۲} + ۱۸\sqrt{۲} = ۳۲\sqrt{۲}$



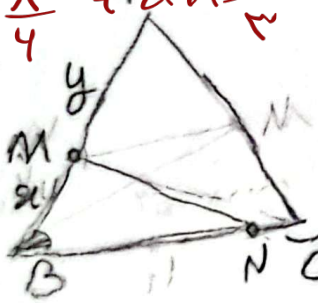
$S_{ABC} - S_{ADE} = ۱,۷a$

$\frac{۷ \times a \times \sin A}{۲} - \frac{۷ \times ε \times \sin A}{۲} = \frac{۱۷}{ε}$

$\sin A \times \frac{۷}{۲} = \frac{۷}{ε}$

$\sin A = \frac{۱}{۲}$

$A = \frac{\pi}{۶}$ $\tan = \frac{\sqrt{۳}}{۳}$



$\frac{۲}{۳} BN \times NC = \frac{۲}{۳} BN$

$۲BN = ۳NC$

$\frac{۲}{۳} BN x = \frac{a}{۳} BNy \leftarrow \frac{a}{۳} BNx + \frac{a}{۳} BNy = ۳BNx$

$\frac{x}{y} = \frac{ε}{a}$

$\tan A = \frac{\frac{۱}{ε}}{\frac{۹}{۱۲}} = \frac{۱۲}{۳۶}$

$\cos A = \frac{۹}{۱۲}$

$۹ = ۱۲ \cos A$

$DE^{۲} = BC^{۲} = ۲a^{۲} + ۲۹ - ۷_{۰} \cos A = ۱۹ + ۶۹ - a۹ \cos A$

$S_{ABC} = ۳ S_{BMN}$

$\frac{a}{۳} BN \times (x+y) \sin B = ۳ (BN)(۹) \sin B$

$\frac{۱}{\sqrt{\cos^{۲}\alpha}} - \tan\alpha = \frac{۱ + \sin\alpha}{|\cos\alpha|} \Rightarrow \frac{|\sin\alpha|}{\cos\alpha} = -۱$

$\cos\alpha < ۰ \leftarrow |\cos\alpha| = -\cos\alpha$

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

$\cos\alpha$ (−) $\frac{|\sin\alpha|}{\cos\alpha} = \frac{-۱}{\cot\alpha}$

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

$\sin\alpha < ۰$

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