نسا ... (نام) ۱۹٫۲۵ عالی

تاریخ:

ABP VIBRO

① الف) $\tan(3\pi - \frac{\pi}{4}) + \sin(4\pi - \frac{\pi}{4}) \cdot \cos(3\pi + \frac{\pi}{4})$

8:00 $-\tan(\frac{\pi}{4}) + -\sin(\frac{\pi}{4}) \times -\cos\frac{\pi}{4} = -1 + \frac{1}{2} = -\frac{1}{2}$ ✓ ۲

ب) $\tan(3\pi - \frac{\pi}{4}) \times \sin(4\pi - \frac{\pi}{3}) + \cos(3\pi + \frac{\pi}{3}) \to (-\tan(\frac{\pi}{4})$

9:00

$\times (\sin(\frac{\pi}{3}) - \cos\frac{\pi}{3} = -\frac{1}{2} \cdot \frac{1}{2} = 0$ ✓

10:00 ② $\frac{\text{بالا}}{\sin x} \to \frac{3\cot x - 1}{\cot x + 1} \to \frac{12-1}{4+1} = \frac{11}{5} = 2{,}2$ ✓ ۲

11:00 ③ $\sin^2\alpha + \cos^2\alpha = 1 \to (2\cos\alpha)^2 + \cos^2\alpha = 1 \to 4\cos^2\alpha + \cos^2\alpha = 1$ ۲

$\to 5\cos^2\alpha = 1 \to \cos^2\alpha = \frac{1}{5} \to \cos\alpha = +\frac{\sqrt{5}}{5}, -\frac{\sqrt{5}}{5}$

12:00 $\cos\alpha = \frac{-\sqrt{5}}{5}$

④ ب) $\sin(2\pi + \frac{\pi}{4} + \alpha) = \sin\frac{5\pi}{4} \times \cos\alpha + \sin\alpha \times \cos\frac{5\pi}{4}$

13:00 $\frac{-\sqrt{2}}{2} \times \frac{7}{5\sqrt{2}} + \frac{1}{5\sqrt{2}} \times \frac{-\sqrt{2}}{2} = -\frac{8}{10} = -\frac{4}{5}$ ✓ $\to 1 + \tan^2 = \frac{1}{\cos^2}$ ۱٫۷۵

$= \frac{1}{7}, \sin\alpha = \frac{1}{5\sqrt{2}}, \cos = \frac{7}{5\sqrt{2}}$

14:00 الف؟!!

⑤ $\sin^2 x = 1 - \cos^2 x \to 2(1 - \cos^2 x) + \cos^2 x = \frac{4}{3}$

15:00 $\cos^2 x = \frac{2}{3}$ ۲

$1 + \tan^2 x = \frac{1}{\cos^2 x} \to 1 + \tan^2 = \frac{3}{2}, \tan^2 = \frac{1}{2}$ ✓

16:00 ⑥ مساحت: $\frac{1}{2} \times 6 \times \sqrt{3} \times \sin\alpha = 4{,}5 \to \sin\alpha = \frac{4{,}5}{3\sqrt{3}} = \frac{\sqrt{3}}{2}$ ✓ ۲

$\frac{120}{60} = 2$

17:00 ⑦ $(\frac{1}{2} \times 3\pi \times 3\pi \times \sin 30) \times ^2 = 54$

$3x^2 = 54 \quad x^2 = 18 \to x = \pm\sqrt{18}$

18:00 $+\sqrt{18}$ ✓ $P(3\sqrt{18} + 2\sqrt{18}) \times 2 = 10\sqrt{18}$ ✓ ۲

19:00

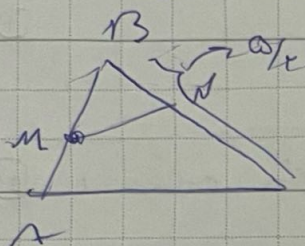
تاریخ:

$S_{ABC} = \frac{1}{2} \times 5 \times 7 \sin A$

$\frac{35}{2} \sin A = 17.5 \sin A$ $\quad S_{ADE} = \frac{1}{2} \times 4 \times 7 \sin A$

$17.5 \sin A - 14 \sin A = 17.5 \rightarrow 3.5 \sin A = 17.5$

$\sin A = \frac{1}{2} \rightarrow A = 30^\circ \rightarrow \tan 30^\circ = \frac{\sqrt{3}}{3}$



$2BN = 3NC \rightarrow BN = \frac{3}{2} NC$

$\frac{3}{2} NC + NC = \frac{5}{2} NC$

$S_{ABC} = \frac{1}{2} \times \frac{5}{2} NC \times AB \times \sin B$

$3\left(\frac{1}{2} \times \frac{3}{2} NC \times MB \times \sin B\right)$

$\frac{5}{4} NC \times AB \times \sin B = \frac{9}{4} NC \times MB \times \sin B$

$\frac{5}{4} BM + \frac{5}{4} AM = \frac{9}{4} MB$ $\quad \frac{5}{4} AM = MB$

$\frac{BM}{AM} = \frac{5}{4}$

$\frac{|\sin\alpha|}{\cos\alpha} = -\frac{1}{\cot\alpha} \rightarrow \frac{|\sin\alpha|}{\cos\alpha} = -\frac{\sin\alpha}{\cos\alpha} \rightarrow \sin\alpha < 0$

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

$\cos\beta > 0 \rightarrow \tan\alpha = -\tan\alpha$ ✗

$\cos\beta < 0 \rightarrow \tan\alpha = \tan\alpha$ ✓ $\rightarrow$ قابل قبول

۴ـ الف

$\cos^2\alpha = 1 - \sin^2\alpha \rightarrow \cos\alpha = 1 - \left(\frac{\sqrt{2}}{10}\right)^2 = 1 - \frac{2}{100} = \frac{98}{100}$ $\xrightarrow[\cos\alpha < 0]{\alpha \text{ ناصیه } 2}$ $\cos\alpha = -\frac{7\sqrt{2}}{10}$

$\cos\left(\frac{11\pi}{2} + \alpha\right) = \cos\left(3\pi - \frac{\pi}{2} + \alpha\right) = -\cos\left(\alpha - \frac{\pi}{2}\right)$

$-\left(\frac{\sqrt{2}}{10} \times \cos\alpha + \frac{\sqrt{2}}{10} \sin\alpha\right) = -\frac{\sqrt{2}}{10}\left(-\frac{7\sqrt{2}}{10} + \frac{\sqrt{2}}{10}\right) = -\frac{1}{50} \times -\frac{12}{10} = \boxed{\frac{3}{25}}$

حس کردم معلوم نیست راه حل بالا ↑

$\cos^2\alpha = 1-\sin^2\alpha \longrightarrow \cos\alpha = 1-(\frac{\sqrt{2}}{10})^2 = 1-\frac{2}{100} = \frac{98}{100} \xrightarrow[\cos\alpha<0]{\alpha \text{ ناحیه } 2} \cos\alpha = -\frac{7\sqrt{2}}{10}$

$\cos(\frac{11\pi}{2}+\alpha) = \cos(3\pi - \frac{\pi}{2}+\alpha) = -\cos(\alpha-\frac{\pi}{2})$

$-(\frac{\sqrt{2}}{2}\times\cos\alpha + \frac{\sqrt{2}}{2}\sin\alpha) = -\frac{\sqrt{2}}{2}(-\frac{7\sqrt{2}}{10}+\frac{\sqrt{2}}{10}) = -\frac{1}{\sqrt{2}}\times -\frac{6\sqrt{2}}{10} = \boxed{\frac{3}{5}}$