پارسا صنایعی ۲۵ عصر نوشته! شاره تکلیف ۱۸ - دهم پسر A

۱- الف) $\tan\frac{11\pi}{4}+\sin\frac{15\pi}{4}\cos\frac{13\pi}{4}=-\tan\frac{\pi}{4}+(-\sin\frac{\pi}{4})(-\cos\frac{\pi}{4})$

$3\pi-\frac{\pi}{4}$ $4\pi-\frac{\pi}{4}$ 3π $\frac{\pi}{4}$

$=-1+\left(\frac{-\sqrt{2}}{2}\times\frac{-\sqrt{2}}{2}\right)=-1+\frac{1}{2}=-\frac{1}{2}$ (۲)

ب) $\tan\frac{17\pi}{6}\sin\frac{11\pi}{3}+\cos\frac{10\pi}{3}=\tan\frac{\pi}{6}\times(-\sin\frac{\pi}{3})-\cos\frac{\pi}{3}$

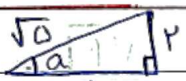
$3\pi-\frac{\pi}{6}$ $4\pi-\frac{\pi}{3}$ $3\pi+\frac{\pi}{3}$

$=\frac{-\sqrt{3}}{3}\times\frac{-\sqrt{3}}{2}-\frac{1}{2}=\frac{3}{6}-\frac{3}{6}=0$

۲- $\cot x=\frac{\cos x}{\sin x}=4\Rightarrow 4\sin x=\cos x$ (۲)

$\frac{3\cos x-\sin x}{\cos x+\sin x}=\frac{3(4\sin x)-\sin x}{4\sin x+\sin x}=\frac{11\sin x}{5\sin x}=2.2$

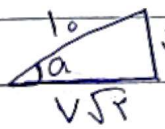
۳- $\sin\alpha=2\cos\alpha\Rightarrow\tan\alpha=2$ (۲)



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

۴- $3\pi-\frac{\pi}{4}$ $3\pi-\frac{\pi}{4}$

الف) (۲) $\cos(\frac{11\pi}{4}+\alpha)=\cos\frac{11\pi}{4}\cos\alpha-\sin\frac{11\pi}{4}\sin\alpha$



ربع دوم $\rightarrow\cos\alpha=\frac{-3\sqrt{2}}{10}$

$\frac{-\sqrt{2}}{2}\times\frac{-3\sqrt{2}}{10}-\frac{\sqrt{2}}{2}\times\frac{\sqrt{2}}{10}=\frac{3}{10}-\frac{1}{10}=0.4$

3π $\frac{\pi}{4}$

ب) $\sin(\frac{13\pi}{4}+\alpha)=\sin\frac{13\pi}{4}\cos\alpha+\sin\alpha\cos\frac{13\pi}{4}$

$\Rightarrow\begin{cases}\sin\alpha=\frac{1}{5\sqrt{2}}\\ \cos\alpha=\frac{7}{5\sqrt{2}}\end{cases}$

$\frac{-\sqrt{2}}{2}\times\frac{7}{5\sqrt{2}}+\frac{1}{5\sqrt{2}}\times\frac{-\sqrt{2}}{2}=\frac{-7}{10}+\frac{-1}{10}=-0.8$

۵- $2\sin^2x+\cos^2x=\frac{4}{3}=\sin^2x+\underbrace{\sin^2x+\cos^2x}_{1}=\frac{4}{3}\Rightarrow\sin^2x=\frac{1}{3}$ (۲)

$1+\cot^2x=\frac{1}{\frac{1}{3}}\Rightarrow 1+\cot^2x=3\Rightarrow\cot^2x=2\Rightarrow\tan^2x=\frac{1}{2}$

Subject: Date

$\frac{1}{2} \times 4 \times \sqrt{3} \times \sin a = 4,5 \Rightarrow 2\sqrt{3}\sin a = 4,5$ ۶ ـ ۲

$\Rightarrow \sin a = \frac{4,5}{2\sqrt{3}} = \frac{1,5}{\sqrt{3}} = \frac{3}{2\sqrt{3}} = \frac{\sqrt{3}}{2} \Rightarrow a < \begin{matrix} 60^\circ \\ 120^\circ \end{matrix}$ ✓

$\frac{120}{60} = 2$ ✓

$2k \times 3k \times \sin 120^\circ = 54 \Rightarrow \frac{3}{2}k^2 \times \frac{1}{2} = 54 \Rightarrow k^2 = 18 \Rightarrow k = 3\sqrt{2}$ ـ ۷

محیط $= 2(2k+3k) = 2(2\times 3\sqrt{2} + 3\times 3\sqrt{2}) = 30\sqrt{2}$ ✓ ۲

$\frac{1}{2} \times 5 \times 6 \sin A - \frac{1}{2} \times 5 \times 4 \sin A = 1,5$ ۸ ـ ۲

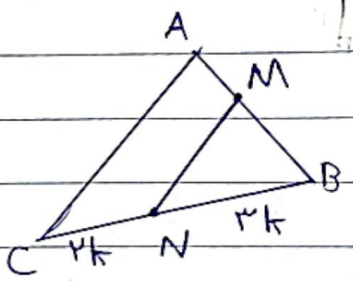
$S_{\hat{ABC}}$ $S_{\hat{ADE}}$

$\Rightarrow \frac{5}{2}\sin A(6-4) = 1,5$

$\Rightarrow \frac{5}{2}\sin A = \frac{5}{4} \Rightarrow \sin A = \frac{1}{2}$

$\Rightarrow A < \begin{matrix} 30^\circ \checkmark \\ 150^\circ \times \end{matrix}$ ← A حاده است

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



$2\overline{BN} = 3\overline{NC} \Rightarrow BN = 3k$ ۹ ـ ۲

$\overline{NC} = 2k$

$\frac{S_{\hat{ABC}}}{S_{\hat{BMN}}} = \frac{\frac{1}{2} \times AB \times 5k \sin B}{\frac{1}{2} MB \times 3k \sin B} = 3 \Rightarrow 9MB = 5AB$

$\Rightarrow MB = 5x$

$AB = 9x$

$AM = AB - MB = 9x - 5x = 4x$

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

$\frac{1}{\sqrt{\cos^2 a}} - \tan a = \frac{1+\sin a}{|\cos a|} \Rightarrow \frac{1}{|\cos a|} - \frac{1+\sin a}{|\cos a|} = \frac{\sin a}{\cos a}$ ـ ۱۵ ۲

$\Rightarrow \frac{-\sin a}{|\cos a|} = \frac{\sin a}{\cos a} \Rightarrow -\sin a \cos a = \sin a |\cos a| \Rightarrow -\cos a = |\cos a|$

$\cos a$ ← منفی است

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

$\sin a$ ← منفی است

از آنجایی که $\cos a$ و $\sin a$ منفی هستند پس انتهای کمان a در ربع سوم است. ✓