

٢٥

ثان باب / حساب / تطبيق

الف) $\tan \frac{11\pi}{K} + \sin \frac{10\pi}{K} \cos \frac{13\pi}{K} =$ (1)

$\tan \left(2\pi + \frac{3\pi}{K} \right) + \sin \left(2\pi + \frac{3\pi}{K} \right) \cos \left(2\pi + \frac{\pi}{K} \right) =$

$\tan 135^\circ + \sin 135^\circ \cos 225^\circ = (-1) + \left(-\frac{\sqrt{2}}{2} \times -\frac{\sqrt{2}}{2} \right)$

$= -\frac{1}{2}$

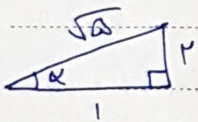
ب) $\tan \left(2\pi + \frac{5\pi}{4} \right) \sin \left(2\pi + \frac{3\pi}{4} \right) + \cos \left(2\pi + \frac{\pi}{4} \right) =$
 $\tan 160^\circ \sin 105^\circ + \cos 285^\circ =$

$-\frac{\sqrt{10}}{10} \times -\frac{\sqrt{10}}{2} + \left(-\frac{1}{2} \right) = \frac{1}{2} - \frac{1}{2} = 0$

$\cot x = K \frac{\cos x}{\sin x} = K \rightarrow \cos x = K \sin x$ (2)

$\frac{K(\sin x) - \sin x}{K \sin x + \sin x} = \frac{11 \sin x}{2 \sin x} = \frac{11}{2} = \frac{11 \cdot 2}{2}$

$\sin x = 2 \cos x \Rightarrow \frac{\sin x}{\cos x} = 2 \Rightarrow \tan x = 2$ (3)



$\tan \alpha = \frac{\text{الضلع المقابل}}{\text{الضلع المجاور}} = \frac{2}{1}$ $\text{نقطة في} \Rightarrow 2^2 + 1^2 = 5 \Rightarrow \sqrt{5}$

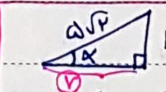
$\cos \alpha = \frac{\text{المجاور}}{\text{الفرض}} = \frac{1}{\sqrt{5}} \xrightarrow{\text{بضرب 2}} \frac{-1}{\sqrt{5}}$



$1^2 + (\sqrt{5})^2 = 6$

ب) الفرض

$\sin \alpha = \frac{1}{\sqrt{6}} \quad \left\{ \begin{array}{l} \frac{11\pi}{K} = 2\pi + \frac{\pi}{K} \Rightarrow \frac{11\pi}{K} \end{array} \right.$



$(\sqrt{6})^2 - 1^2 = K^2 \rightarrow \sqrt{6} \cos \alpha = \frac{-K}{\sqrt{6}}$

الف الفرض

$\sin \left(\frac{11\pi}{K} + \alpha \right) = \left(\sin \frac{11\pi}{K} \times \cos \alpha \right) +$
 $\left(\sin \alpha \times \cos \frac{11\pi}{K} \right) =$

$\cos \left(\frac{11\pi}{K} + \alpha \right) =$
 $\left(\cos \frac{11\pi}{K} \times \cos \alpha \right) - \left(\sin \frac{11\pi}{K} \times \sin \alpha \right) =$

$\Rightarrow \left(-\frac{\sqrt{6}}{6} \times \frac{1}{\sqrt{6}} \right) + \left(\frac{1}{\sqrt{6}} \times -\frac{\sqrt{6}}{6} \right) = -\frac{2}{6}$

$\left(-\frac{\sqrt{6}}{6} \times -\frac{1}{\sqrt{6}} \right) - \left(\frac{1}{6} \times \frac{1}{\sqrt{6}} \right) = \frac{1}{6}$

ايضا

$$P \sin^2 n + \cos^2 n = \frac{P}{\mu} \xrightarrow{\cos^2 n = 1 - \sin^2 n}$$

④

$$P \sin^2 n + (1 - \sin^2 n) = \frac{P}{\mu} \Rightarrow \sin^2 n + 1 = \frac{P}{\mu}$$

$$\sin^2 n = \frac{1}{\mu} \quad \sum 1 - \sin^2 n = \cos^2 n \Rightarrow 1 - \frac{1}{\mu} = \frac{P}{\mu} = \cos^2 n$$

$$\tan^2 n = \frac{\sin^2 n}{\cos^2 n} = \frac{\frac{1}{\mu}}{\frac{P}{\mu}} = \frac{1}{P}$$

$$\frac{1}{P} \times 4 \times \sqrt{P} \times \sin \alpha = F/d \Rightarrow \sqrt{P} \sin \alpha = F/d \Rightarrow \sin \alpha = \frac{\sqrt{P}}{P}$$

⑤

$$\frac{1/P_0}{4_0} = \frac{P}{6}$$

$1/P_0 \leftarrow$ بقیه
 $4_0 \leftarrow$ کل

$$P \left(\frac{1}{P} \times \frac{P}{2} \times \frac{P}{2} \times \frac{1}{P} \right) = \Delta F \quad P_2 = \Delta F \quad n = \sqrt{11}$$

⑥

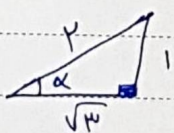
$$P_1 + P_2 + P_3 + P_4 = 10 \times 2 \Rightarrow 10 \sqrt{11} \Rightarrow \frac{10 \sqrt{P}}{6}$$

$$S_{ABC} - S_{ADE} = 1, Va$$

⑦

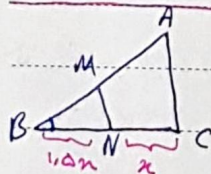
$$\left(\frac{1}{P} \times \Delta \times V \times \sin A \right) - \left(\frac{1}{P} \times F \times V \times \sin A \right) = 1, Va$$

$$V, \Delta \sin A - F \sin A = P, \Delta \sin A = 1, Va \Rightarrow \sin A = 0, \Delta = \frac{1}{P}$$



$$\frac{P}{P} - \frac{1}{P} = \frac{P}{P} \Rightarrow \sqrt{P}$$

$$\tan A = \frac{\text{دقیه}}{\text{جانب مجاور}} = \frac{1}{\sqrt{P}} = \frac{\sqrt{P}}{P}$$



$$P_{BN} = P_{NC} \quad BN = \frac{P}{P} NC = 1, \Delta NC$$

⑧

$$\frac{S_{ABC}}{S_{BAN}} = P = \frac{\frac{1}{P} \times AB \times P, \Delta \times \sin \hat{B}}{\frac{1}{P} \times MB \times 1, \Delta \times \sin \hat{B}} = \frac{\Delta AB}{P MB} = P$$

$$\Delta AB = 9 MB \Rightarrow MB = \frac{\Delta}{9} AB \Rightarrow MA = \frac{P}{9} AB$$

$$\frac{MB}{MA} = \frac{\frac{\Delta}{9} AB}{\frac{P}{9} AB} = \frac{\Delta}{P}$$

$$\frac{1, Va}{6}$$

ایما

⑤ $\cos \alpha$ حتماً مثبتی است

$$-\cos \alpha = |\cos \alpha| \quad \leftarrow$$

$$\cos \alpha < 0 \quad \leftarrow \text{نقص ۲ و ۳}$$

اما چون این نبوده پس $\cos \alpha$ مثبتی است

$$\frac{1 - \sin \alpha}{|\cos \alpha|} \Rightarrow \text{در } \cos \alpha \text{ مثبت باشد}$$

$$\frac{|\sin \alpha|}{\cos \alpha} = -\frac{1}{\frac{\cos \alpha}{\sin \alpha}} = -\frac{\sin \alpha}{\cos \alpha} \Rightarrow \sin \alpha < 0 \quad \leftarrow \text{چون}$$

$$|\sin \alpha| = -\sin \alpha \quad \leftarrow \text{نقص ۲ و ۳}$$

$$\Rightarrow \text{نقص ۲}$$