

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

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

$\cos x = \frac{1}{2} \Rightarrow \frac{\cos x}{\sin x} = \frac{1}{2} \Rightarrow 2 \sin x = \cos x$ $\frac{\cos x - \sin x}{\cos x + \sin x} = \frac{1 \sin x - \sin x}{2 \sin x + \sin x}$

$\Rightarrow \frac{11 \sin x}{2 \sin x} = \frac{11}{2} \checkmark$

$\sin a = 2 \cos a \Rightarrow \sin^2 a = 4 \cos^2 a \Rightarrow \sin^2 a + \cos^2 a = 1 \Rightarrow 5 \cos^2 a = 1$

$\Rightarrow 5 \cos^2 a = 1 \Rightarrow \cos^2 a = \frac{1}{5} \Rightarrow \cos a = -\sqrt{\frac{1}{5}} = -\frac{1}{\sqrt{5}} = -\frac{\sqrt{5}}{5} \checkmark$

الف) $\cos\left(\frac{13\pi}{12} + a\right) = \cos\left(\frac{5\pi}{12} + a\right) \Rightarrow \sin^2 a + \cos^2 a = 1 \Rightarrow \frac{1}{11} + \cos^2 a = 1$

$\cos \frac{5\pi}{12} = -\frac{\sqrt{3}}{2}$

$\cos(a+B) = (\cos a \cdot \cos B) - (\sin a \cdot \sin B) = \left(\frac{\sqrt{11}}{11} \times -\frac{\sqrt{3}}{2}\right) + \left(\frac{\sqrt{3}}{11} \times \frac{\sqrt{3}}{2}\right)$
 $= \frac{\sqrt{11} - 1}{10}$
 ب) $\sin\left(\frac{13\pi}{12} + a\right) = \sin\left(\frac{5\pi}{12} + a\right) \cdot 1 + \tan a = \frac{1}{\cos a} \Rightarrow 1 + \frac{1}{\cos a} = \frac{1}{\cos a} \Rightarrow \cos a = \frac{1}{10}$
 $\Rightarrow \cos a = \frac{1}{10}$ و $\sin a = \frac{1}{10}$ $\sin \frac{5\pi}{12} = \frac{\sqrt{3}}{2}$ و $\cos \frac{5\pi}{12} = -\frac{\sqrt{3}}{2}$ $\sin(a+B) = \sin a \cos B + \sin B \cos a$
 $\Rightarrow \left(\frac{1}{10} \times -\frac{\sqrt{3}}{2}\right) + \left(-\frac{\sqrt{3}}{2} \times \frac{1}{10}\right) = -\frac{\sqrt{3}}{10} \checkmark$

$2 \sin^2 x + \cos^2 x = \frac{5}{3}$

$+ (-\sin^2 x - \cos^2 x = -1)$

$\sin^2 x = \frac{1}{3}$

$\frac{1}{2} + \cos^2 x = \frac{5}{2} \Rightarrow \cos^2 x = \frac{2}{2}$

$\tan^2 x = \frac{\sin^2 x}{\cos^2 x} = \frac{1/3}{2} = \frac{1}{6} \checkmark$

$$\frac{4 \sin a \times \sqrt{2}}{2} = \frac{4}{\sqrt{2}}$$

$$95 \sin \alpha = c \sqrt{c} \Rightarrow \sin \alpha = \frac{\sqrt{c}}{c}$$

$$\Rightarrow a <_{K_0} a.$$

$$\frac{12}{80} = \frac{3}{20}$$

②

$$S = \tau \left(\frac{4\pi^2 \times \frac{1}{\epsilon}}{\lambda} \right) = \omega \epsilon$$

$$\frac{a^c}{a} = 9 \Rightarrow a^c = 1a \Rightarrow x = \sqrt[4]{1} = 1\sqrt{1} \Rightarrow 1(1\sqrt{1} + 1\sqrt{1}) = 1\sqrt{2}$$

Q

$$\frac{1}{r} \times V \times \omega \times \sin A - \frac{1}{r} \times V \times \ell \times \sin A = \frac{1}{r} V \omega \Rightarrow V \omega \sin A - V \ell \sin A = V \omega$$

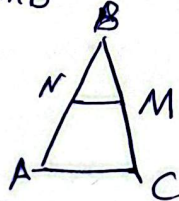
$$\Rightarrow r_d \sin \hat{A} = l v_d \Rightarrow \sin \hat{A} = \frac{l}{r_d} \Rightarrow \tan \hat{A} = \frac{\sqrt{r_d}}{2}$$

ماحول $\hat{A}$ حلقہ است $\hat{A}$ جس $\hat{A}$ پر است .

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$$\frac{S_{BMN}}{S_{ABC}} = \frac{\frac{1}{2} \times MB \times \sin B}{\frac{1}{2} \times AB \times \sin B} = \frac{1}{2} \Rightarrow \frac{1}{2} \times \frac{MB}{AB} = \frac{1}{2} \Rightarrow \frac{MB}{AB} = \frac{1}{2}$$

$$\Rightarrow \frac{m_B}{\Delta m} = \frac{d}{\epsilon} \quad \checkmark$$



Q

$$\frac{|\sin a|}{\cos a} = -\frac{\sin a}{\cos a} \Rightarrow \sin a = \ominus \quad \frac{1}{|\cos a|} - \frac{\sin a}{\cos a} = \frac{1 + \sin a}{|\cos a|}$$

$$\Rightarrow -\frac{1}{\cos a} - \frac{\sin a}{\cos a} = \frac{-1 - \sin a}{\cos a} = \frac{1 + \sin a}{\cos a} \Rightarrow \cos a = \ominus$$

نامیہ رسوم ✓

الذي ربع دوم $\begin{cases} \sin \alpha > 0 \\ \cos \alpha < 0 \end{cases} \rightarrow \cos^2 \alpha = 1 - \sin^2 \alpha \rightarrow \cos^2 \alpha = 1 - \left(\frac{\sqrt{2}}{1.}\right)^2 = \frac{4}{1.} \quad \text{سؤال 1}$

$$\sqrt{} \rightarrow \cos \alpha = \pm \frac{\sqrt{4}}{1.} \xrightarrow{\beta = \pi/2} \frac{\cos \alpha < 0}{\cos \alpha < 0} \rightarrow -\frac{\sqrt{4}}{1.} = \frac{-\sqrt{2}}{1.}$$

$$\cos\left(\frac{11\pi}{4} + \alpha\right) \rightarrow \cos\left(\pi - \frac{\pi}{4} + \alpha\right) = \cos\left(\pi + \left(\alpha - \frac{\pi}{4}\right)\right) = -\cos\left(\alpha - \frac{\pi}{4}\right)$$

$$\cos(\alpha - \beta) = \cos \alpha \cos \beta + \sin \alpha \sin \beta$$

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

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