

سوال ۱) $\tan(2\pi - \frac{\pi}{4}) + \sin(\pi - \frac{\pi}{4}) \times \cos(3\pi + \frac{\pi}{4}) \Rightarrow$
 $-\tan(\frac{\pi}{4}) + (-\sin \frac{\pi}{4}) \times -\cos \frac{\pi}{4} = -1 + \frac{1}{2} = -\frac{1}{2}$

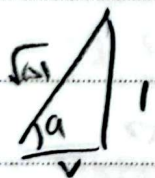
ب) $\tan(2\pi - \frac{\pi}{4}) \times \sin(\pi - \frac{\pi}{4}) + \cos(3\pi + \frac{\pi}{4}) = [-\tan(\frac{\pi}{4}) \times$
 $-\sin(\frac{\pi}{4})] - \cos(\frac{\pi}{4}) \Rightarrow \frac{1}{2} - \frac{1}{2} = 0$

مسئله ۲) $\frac{\sin}{\cos} \Rightarrow \frac{3\cot \pi - 1}{\cot \pi + 1} = \frac{3 \times \infty - 1}{\infty + 1} = \frac{1}{\infty} = 0$

سوال ۳) $(2\cos \alpha)^2 + \cos^2 \alpha = 1 \Rightarrow 4\cos^2 \alpha + \cos^2 \alpha = 1$
 $\Rightarrow 5\cos^2 \alpha = 1 \quad \cos^2 \alpha = \frac{1}{5} \Rightarrow \cos \alpha = \pm \frac{1}{\sqrt{5}}$

سوال ۴) الف) $1 - \frac{2}{1} = \frac{9}{1} \Rightarrow \frac{\sqrt{9}}{1} \Rightarrow \frac{\sqrt{9}}{1}$
 $\cos(\alpha + \frac{3\pi}{4}) = \cos \alpha \cos \frac{3\pi}{4} - \sin \alpha \sin \frac{3\pi}{4}$
 $-\frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2} - \frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2} = -\frac{2}{2} = -1$

ب) $\frac{13\pi}{4} = 3\pi + \frac{\pi}{4} \Rightarrow -\sin(\frac{\pi}{4} + \alpha)$



$\sin \frac{\pi}{4} \cos \alpha + \cos \frac{\pi}{4} \sin \alpha$
 $\frac{\sqrt{2}}{2} \times \frac{1}{\sqrt{2}} + \frac{\sqrt{2}}{2} \times \frac{1}{\sqrt{2}} = \frac{2}{2} = 1$

$\sin(\frac{13\pi}{4} + \alpha) = -\frac{1}{\sqrt{2}}$

Arman

$$\sin^2 \theta = 1 - \cos^2 \theta \rightarrow 1(1 - \cos^2 \theta) + \cos^2 \theta = \frac{1}{4} \quad \text{سوال 9}$$

$$\rightarrow \cos^2 \theta = \frac{3}{4} \quad 1 + \tan^2 \theta = \frac{1}{\cos^2 \theta} \rightarrow 1 + \tan^2 \theta = \frac{4}{3}$$

$$\tan^2 \theta = \frac{1}{3}$$

$$\sin S = \frac{1}{4} \times 4 \times \sqrt{2} \times \sin \alpha = 1, \Delta \quad \text{سوال 9}$$

$$2\sqrt{2} \sin \alpha = 1, \Delta \quad \sin \alpha = \frac{1, \Delta}{2\sqrt{2}} = \frac{1, \Delta \sqrt{2}}{2 \times 2} = \frac{\sqrt{2}}{2}$$

$$\frac{12.^\circ}{4.^\circ} = 2 \times 2 \times 2 \quad 12.^\circ \leftarrow \alpha \leftarrow 12.^\circ$$

$$\left(\frac{1}{4} \times 12 \times 12 \times \sin 12.^\circ \right) \times 2 = \Delta F \quad \text{سوال 10}$$

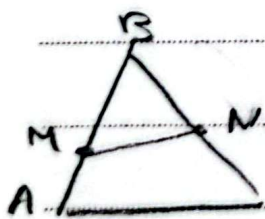
$$9 \times 12 \times \frac{1}{4} = 12 \times 12 = \Delta F \quad m = 12 \quad n = 12$$

$$P = (12\sqrt{12} + 12\sqrt{12}) \times 2 = 10\sqrt{12}$$

$$S_{ABC} = \frac{1}{4} \times \Delta \times V \times \sin \hat{A} = \frac{1, \Delta}{4} \sin \hat{A} = 1, \Delta \sin \hat{A} \quad \text{سوال 11}$$

$$S_{ADE} = \frac{1}{4} \times 1 \times V \times \sin \hat{A} \quad 1, \Delta \sin \hat{A} - 1, \Delta \sin \hat{A} = 1, \Delta$$

$$1 \sin \hat{A} = 1, \Delta \rightarrow \sin \hat{A} = 1, \Delta = \frac{1}{4} \quad \hat{A} = 12.^\circ \quad \tan 12.^\circ = \frac{\sqrt{2}}{4}$$



$$BN = NC \rightarrow BN = \frac{1}{4} NC \Rightarrow \frac{1}{4} NC + NC = \frac{5}{4} NC$$

$$S_{ABC} = \frac{1}{4} \times \frac{5}{4} NC \times AB \times \sin \hat{B} = \frac{5}{16} NC$$

$$1 \left(\frac{1}{4} \times \frac{1}{4} NC \times MB \times \sin \hat{B} \right)$$

$$S_{BMN}$$

$$\frac{BM}{AM} = \frac{1}{4}$$

Arman

$$\frac{1}{4} AM = MB \leftarrow \frac{1}{4} NC \times AB \times \sin \hat{B} = \frac{1}{4} NC \times MB \times \sin \hat{B}$$

$$BM + AM$$

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

$$\frac{1}{\sqrt{\cos^2 \alpha}} = \tan \alpha = \frac{1 + \sin \alpha}{|\cos \alpha|} \rightsquigarrow \tan \alpha = -\frac{\sin \alpha}{|\cos \alpha|}$$

$$\cos > 0 \quad \swarrow \quad \searrow \cos < 0$$

$$\tan \alpha = -\tan \alpha \quad \tan \alpha = \tan \alpha \checkmark$$

$$\rightsquigarrow \cos \alpha < 0, \sin \alpha < 0 \rightarrow \text{third}$$

Arman