

Subject: (


 ۲. عالی

سارا تبریزیا

Date: .....

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

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

سوال ۲)  $\frac{\sin}{\sin} \frac{3\cot x - 1}{\cot x + 1} = \frac{3 \times \frac{1}{\sqrt{2}} - 1}{\frac{1}{\sqrt{2}} + 1} = \frac{\frac{3}{\sqrt{2}} - 1}{\frac{1}{\sqrt{2}} + 1} = \frac{3 - \sqrt{2}}{1 + \sqrt{2}}$

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)  $1 - \frac{2}{1} = \frac{9\sqrt{2}}{1} \Rightarrow \frac{59\sqrt{2}}{1} \Rightarrow \frac{\sqrt{2}}{1}$   
 $\cos\left(\alpha + \frac{3\pi}{4}\right) = \cos\alpha \cos\frac{3\pi}{4} - \sin\alpha \sin\frac{3\pi}{4}$   
 $\frac{\sqrt{2}}{1} \times -\frac{\sqrt{2}}{2} - \frac{\sqrt{2}}{1} \times \frac{\sqrt{2}}{2} = -\frac{2}{2} = -1$

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



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

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

Arman

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

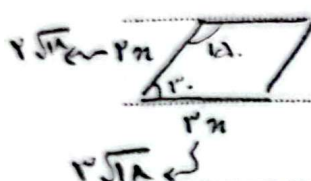
$$\rightarrow \cos^2 \theta = \frac{3}{4} \quad 1 + \tan^2 \theta = \frac{1}{\cos^2 \theta} \rightarrow 1 + \tan^2 \theta = \frac{4}{3}$$

$$\tan^2 \theta = \frac{1}{3} \quad \theta = 30^\circ$$

$$\sin S = \frac{1}{4} \times 4 \times \sqrt{2} \times \sin \alpha = \frac{1}{2}$$

$$\sqrt{2} \sin \alpha = \frac{1}{2} \quad \sin \alpha = \frac{1/2}{\sqrt{2}} = \frac{1}{2\sqrt{2}} = \frac{\sqrt{2}}{4}$$

$$\frac{12^\circ}{4^\circ} = \frac{2}{1} \quad \alpha = 12^\circ$$



$$\left( \frac{1}{4} \times 2 \times 2 \times \sin 45^\circ \right) \times 2 = \Delta K$$

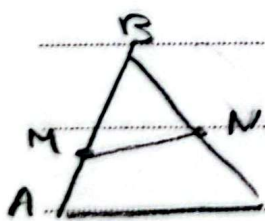
$$4 \times \frac{1}{4} = 1 = \Delta K \quad m = 1 \quad n = \sqrt{2}$$

$$P = (2\sqrt{2} + 2) \times 2 = 4\sqrt{2} + 4$$

$$S_{ABC} = \frac{1}{2} \times 4 \times 4 \times \sin \hat{A} = \frac{8}{1} \sin \hat{A} = 8 \sin \hat{A}$$

$$S_{ADE} = \frac{1}{2} \times 4 \times 4 \times \sin \hat{A} = 8 \sin \hat{A} \quad 8 \sin \hat{A} - 8 \sin \hat{A} = 0$$

$$8 \sin \hat{A} = 8 \sin \hat{A} \rightarrow \sin \hat{A} = \frac{1}{2} \quad \hat{A} = 30^\circ \quad \tan 30^\circ = \frac{1}{\sqrt{3}}$$



$$BN = NC \rightarrow BN = \frac{1}{2} NC \Rightarrow \frac{1}{2} NC + NC = \frac{3}{2} NC$$

$$S_{ABC} = \frac{1}{2} \times \frac{3}{2} NC \times AB \times \sin \hat{B} = \frac{9}{4} NC \times AB \times \sin \hat{B}$$

$$S_{BMN} = \frac{1}{2} \times \frac{1}{2} NC \times MB \times \sin \hat{B}$$

$$\frac{BM}{AM} = \frac{1}{2}$$

Arman

$$\frac{1}{2} AM = MB \quad NC \times AB \times \sin \hat{B} = \frac{9}{4} NC \times MB \times \sin \hat{B}$$

BM + AM



Subject: ( )

Date: \_\_\_\_\_

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

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

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

$$\tan \alpha = -\tan \alpha$$

$$\tan \alpha = \tan \alpha \checkmark$$

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

Arman