

Date:

تکالیف شب ۱۴۰۰

Sub:

گروه دخترانه دهم A

زهرا دهقان

$$الف) ۲۷^\circ = (\pi) \text{ rad} \quad \frac{D}{110} = \frac{\text{rad}}{\pi} \rightarrow \frac{۲۷}{110} = \frac{\pi}{\pi}$$

$$\pi = \frac{۳\pi}{۲0} \text{ rad}$$

$$ب) ۱۴۵^\circ = (\pi) \text{ rad} \quad \frac{D}{110} = \frac{\text{rad}}{\pi} \rightarrow \frac{۱۴۵}{110} = \frac{\pi}{\pi}$$

$$\pi = \frac{۲۵\pi}{۳۴} \text{ rad}$$

$$ج) \frac{۵\pi}{۱۲} \text{ rad} = (\pi)^\circ \quad \frac{۵\pi}{۱۲} \times \frac{110}{\pi} = \frac{۵ \times 110}{۱۲} = ۷۵^\circ$$

$$د) \frac{۵\pi}{۹} \text{ rad} = (\pi)^\circ$$

$$\frac{۵\pi}{۹} \times \frac{110}{\pi} = \frac{۵ \times 110}{۹} = ۱۱0^\circ$$

$$۱) \frac{۱۴۵\alpha}{۹} \times 0,1 = ۱۴,۵\alpha^\circ$$

$$۲) \frac{\alpha\pi}{1} \times \frac{110}{\pi} = ۱۲,۵\alpha^\circ$$

$$۳) 10\alpha^\circ$$

$$10\alpha + ۱۴,۵\alpha + ۱۲,۵\alpha = 110$$

$$۳۷\alpha = 110$$

$$\alpha = 3$$

$$\text{الف) } \cos 45^\circ \cos 30^\circ - \sin 45^\circ \sin 30^\circ - \tan 45^\circ + \cot 30^\circ$$

$$\left(\frac{1}{\sqrt{2}} \times \frac{\sqrt{3}}{2} \right) - \left(\frac{\sqrt{2}}{2} \times \frac{1}{2} \right) - 1 + \sqrt{3}$$

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

$$\text{ب) } \frac{\tan^2 30^\circ + \tan^2 45^\circ + \tan^2 60^\circ}{\cot^2 30^\circ - \cot^2 45^\circ} =$$

$$\frac{\left(\frac{1}{\sqrt{3}} \right)^2 + (1)^2 + (\sqrt{3})^2}{\sqrt{3} - \frac{1}{\sqrt{3}}} = \frac{\frac{1}{3} + 1 + 3}{\frac{3 - 1}{\sqrt{3}}}$$

$$= \frac{\frac{13}{3}}{\frac{2}{\sqrt{3}}} = \frac{13}{2} \times \frac{\sqrt{3}}{2} = \frac{13\sqrt{3}}{4}$$

$$-\sin 30^\circ \cos 45^\circ + \cos 30^\circ \sin 45^\circ = \sin^2 \theta$$

$$\left(-\frac{1}{2} \times \frac{1}{\sqrt{2}} \right) + \left(\frac{\sqrt{3}}{2} \times \frac{\sqrt{2}}{2} \right) = -\frac{1}{2\sqrt{2}} + \frac{\sqrt{6}}{4} = \frac{1}{2\sqrt{2}} = \frac{1}{2}$$

$$\sin^2 \theta = \frac{1}{2} \quad \sin^2 \theta + \cos^2 \theta = 1$$

$$1 - \cos^2 \theta = \frac{1}{2}$$

$$-\cos^2 \theta = -\frac{1}{2} \rightarrow \cos \theta = \sqrt{\frac{1}{2}} = \frac{\sqrt{2}}{2}$$

$$\sin \theta = \sqrt{\frac{1}{2}} = \frac{\sqrt{2}}{2}$$

$$\tan \theta = \frac{\sin \theta}{\cos \theta} = \frac{\frac{\sqrt{2}}{2}}{\frac{\sqrt{2}}{2}} = 1$$

$$\frac{\mu \tan 30^\circ (1 - \tan^2 30^\circ)}{(1 - \cot^2 45^\circ)^2} = \tan \theta$$

$$\frac{\mu \left(\frac{1}{\sqrt{3}}\right) \left(1 - \frac{1}{3}\right)}{\left(1 - \frac{1}{3}\right)^2} = \frac{\left(\frac{\mu \sqrt{3}}{3}\right) \left(\frac{2}{3}\right)}{\frac{4}{9}}$$

$$= \frac{\left(\frac{\frac{\mu \sqrt{3}}{3}}{\frac{4}{9}}\right)}{\frac{\frac{4}{9} \times \frac{\mu \sqrt{3}}{3}}{\frac{4}{9} \times \frac{2}{3}}} = \frac{\mu \sqrt{3}}{2}$$

$$\tan \theta = \sqrt{3} \rightarrow \frac{\sin \theta}{\cos \theta} = \sqrt{3}$$

$$\tan \theta = \sqrt{3} \rightarrow 40^\circ, 140^\circ \xrightarrow{\text{نصف دائرة}} 40^\circ$$

$$40^\circ \xrightarrow{\text{نصف دائرة}} \frac{\pi}{3}$$

$$\mu \sin \theta - \cos \theta$$

$$\sin \theta - \epsilon \cos \theta$$

$$\tan \theta = \omega$$



$$\omega^2 + 1^2 = (\sqrt{2})^2 \rightarrow \omega = \sqrt{2}$$

$$\frac{\mu \left(\frac{\omega}{\sqrt{2}}\right) - \frac{1}{\sqrt{2}}}{\frac{\omega}{\sqrt{2}} - \epsilon \left(\frac{1}{\sqrt{2}}\right)} = \frac{\frac{1\epsilon}{\sqrt{2}}}{\frac{1}{\sqrt{2}}} = \frac{1\epsilon \sqrt{2}}{\sqrt{2}} = 1\epsilon$$

Date:

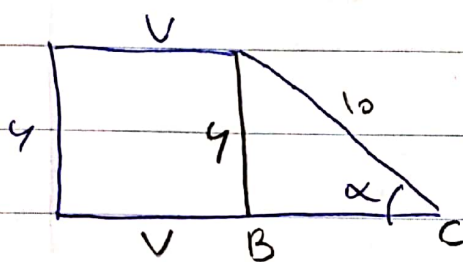
Sub:

$$\tan \theta = \frac{\sin \theta}{\cos \theta} = \omega$$

: روش (۲) ۶

$$\rightarrow \cos \theta = x \rightarrow \sin \theta = \omega x$$

$$\frac{3 \sin \theta - \cos \theta}{\sin \theta - 2 \cos \theta} = \frac{1 \omega x - x}{\omega x - 2x} = \frac{1 \omega x}{x} = 1 \omega$$



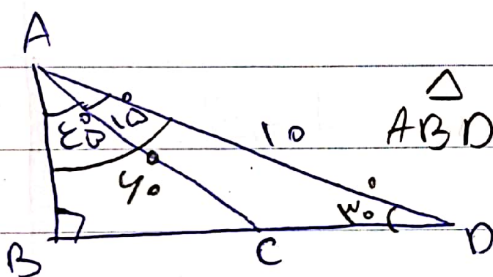
$$\sin \alpha = \frac{4}{10}$$

$$\sin \alpha = \frac{\text{د. قوس}}{\text{وتر}} = \frac{4}{10}$$

$$10^2 - 4^2 = (BC)^2 \rightarrow BC = 1$$

$$\text{محیط} = 4 + 4 + 1 + 4 + 10 = 31$$

زیر



$$DC = 8$$

$$\triangle ABD: \sin 30^\circ = \frac{\text{مقابل}}{\text{وتر}} = \frac{AB}{10} = \frac{1}{2}$$

$$AB = 5$$

$$\triangle ABD: \tan 40^\circ = \frac{\text{مقابل}}{\text{مجاور}} = \frac{BD}{AB} = \frac{BD}{5} = \sqrt{3}$$

$$\triangle ABC: \tan 40^\circ = \frac{\text{مقابل}}{\text{مجاور}} = \frac{BC}{5} = 1$$

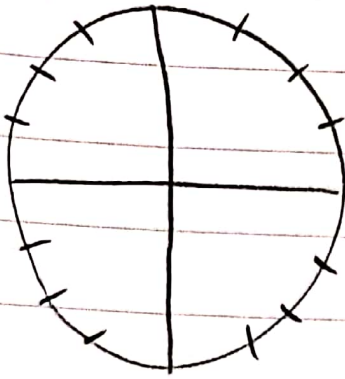
$$BD = 5\sqrt{3}$$

$$BC = 5$$

$$DC = 5\sqrt{3} - 5$$

$$5(\sqrt{3} - 1)$$

PITICO

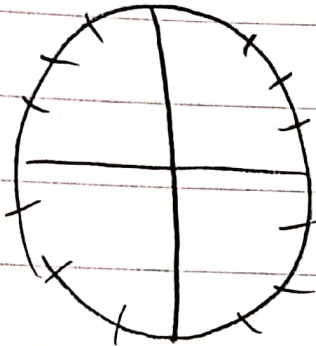


الف 9

$\sin \theta$ کاہشی ہے ربع ۲ و ۳

$\cos \theta$ افزائش ہے ربع ۱ و ۴

سین در نتیجہ ہے ربع ۳ [جواب بخیر]



ب -

$\sin \theta$ و $\cos \theta$ ہر دو کاہشی

↓
ربع ۱ و ۲

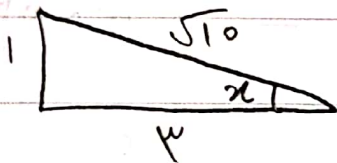
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ربع ۲ و ۳

سین در نتیجہ ہر دو کاہشی ہے ربع ۲ [جواب بخیر]

$$\tan x = \frac{1}{3} \quad \sin x = ?$$

$\tan > 0$ و $\cot > 0$ و $\sin < 0$ و $\cos < 0$

در ناحیہ ۳ ۱۰



$$(\text{وتر})^2 = 9 + 1 \Rightarrow \text{وتر} = \sqrt{10}$$

$$\sin x = \frac{\text{مقابلہ}}{\text{وتر}} = \frac{1}{\sqrt{10}}$$

در ناحیہ ۳ $\rightarrow \sin < 0 \rightarrow \frac{-1}{\sqrt{10}} \rightarrow \frac{-\sqrt{10}}{10}$