

سنا مزاحیہ تکلیف ۱۶ (فردان و نجیبہ)

$$27^\circ = (n) \text{ rad} \rightarrow \frac{27}{180} = \frac{n}{\pi} \rightarrow n = \frac{27\pi}{180}$$

$$120^\circ = (n) \text{ rad} \rightarrow \frac{120}{180} = \frac{n}{\pi} \rightarrow n = \frac{2\pi}{3}$$

$$\frac{5\pi}{12} \text{ rad} = (n)^\circ \rightarrow \frac{\frac{5\pi}{12}}{\frac{\pi}{180}} = \frac{n}{1} \rightarrow \frac{5}{12} = \frac{n}{180} \rightarrow n = 75^\circ$$

$$\frac{4\pi}{9} \text{ rad} = (n)^\circ \rightarrow \frac{\frac{4\pi}{9}}{\frac{\pi}{180}} = \frac{n}{1} \rightarrow \frac{4}{9} = \frac{n}{180} \rightarrow n = 80^\circ$$

$$100^\circ + \frac{1200}{9} \text{ راد} + \frac{5\pi}{7} \text{ راد} \leq 180^\circ$$

$$\frac{D}{180} = \frac{G}{200} = \frac{\text{Rad}}{\pi}$$

$\Rightarrow$

$$100^\circ + 121.5^\circ + 22.1^\circ \leq 180^\circ$$

$$450^\circ = 180^\circ \rightarrow \alpha = 5^\circ$$

$$\frac{2\pi}{7} = \frac{D}{180} \rightarrow D = \frac{180 \times 2\pi}{7} = 121.5^\circ$$

$$\frac{1200}{9} = \frac{D}{180} \rightarrow D = \frac{180 \times 1200}{9} = 24000^\circ$$

(3)

(الف)

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

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$$\frac{\frac{\sqrt{3}}{2} \times \frac{\sqrt{3}}{2} + 1 \times 1 + \sqrt{2} \times \sqrt{2}}{\frac{1}{2} - \frac{\sqrt{2}}{2}} = \frac{\frac{3}{4} + 1 + 2}{\frac{2-2\sqrt{2}}{2}} = \frac{13\sqrt{2}}{9}$$

(4)

$$\rightarrow \frac{1}{2} + \frac{2}{2} = \sin^2 \theta \rightarrow \frac{1}{2} = \sin^2 \theta \rightarrow \sin \theta = \frac{\sqrt{2}}{2}$$

$$\theta = 45^\circ \quad \tan \theta = \tan 45^\circ = \frac{\sqrt{2}}{1} = 1$$

(5)

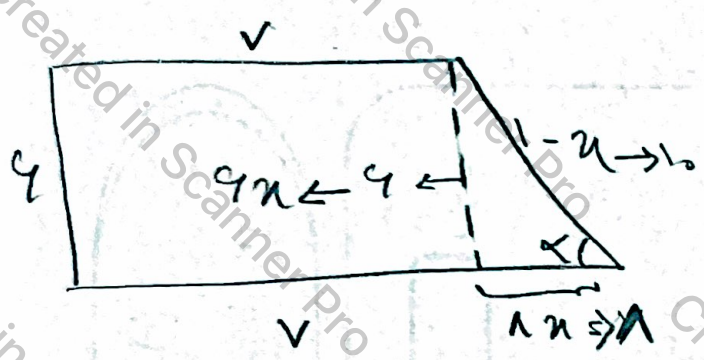
$$2 \left(\frac{\sqrt{2}}{2} \right) \left(1 - \left(\frac{\sqrt{2}}{2} \right)^2 \right) = \frac{2\sqrt{2}}{2} \times \frac{1}{2} = \frac{\sqrt{2}}{2} = 0.707$$

$$\left(1 - \left(\frac{\sqrt{2}}{2} \right)^2 \right)^2 = \frac{24}{21} \Rightarrow \text{مخرج}$$

$$\rightarrow \frac{\frac{\sqrt{2}}{2}}{\frac{24}{21}} = \sqrt{2} = \tan \theta \rightarrow \theta = \tan^{-1} \sqrt{2}$$

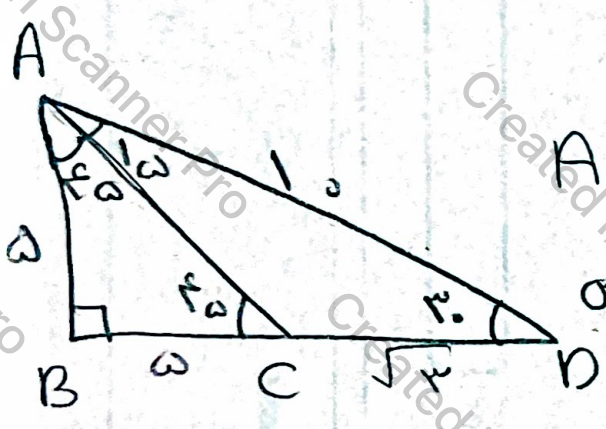
(9)

$$\tan \theta = \omega \xrightarrow{\div \cos} \frac{\frac{\omega \sin \theta}{\cos \theta} - \frac{\cos \theta}{\cos \theta}}{\frac{\sin \theta}{\cos \theta} - \frac{\cos \theta}{\cos \theta}} = \frac{\omega \tan \theta - 1}{\tan \theta - 1} = 1$$



$$\sin \alpha = \frac{4}{10} \rightarrow \alpha \approx 23.6^\circ$$

$$D = 4 + \sqrt{10^2 + 1^2} = 11 + \sqrt{101}$$



$$AB = \frac{1}{2} \times 10 = 5$$

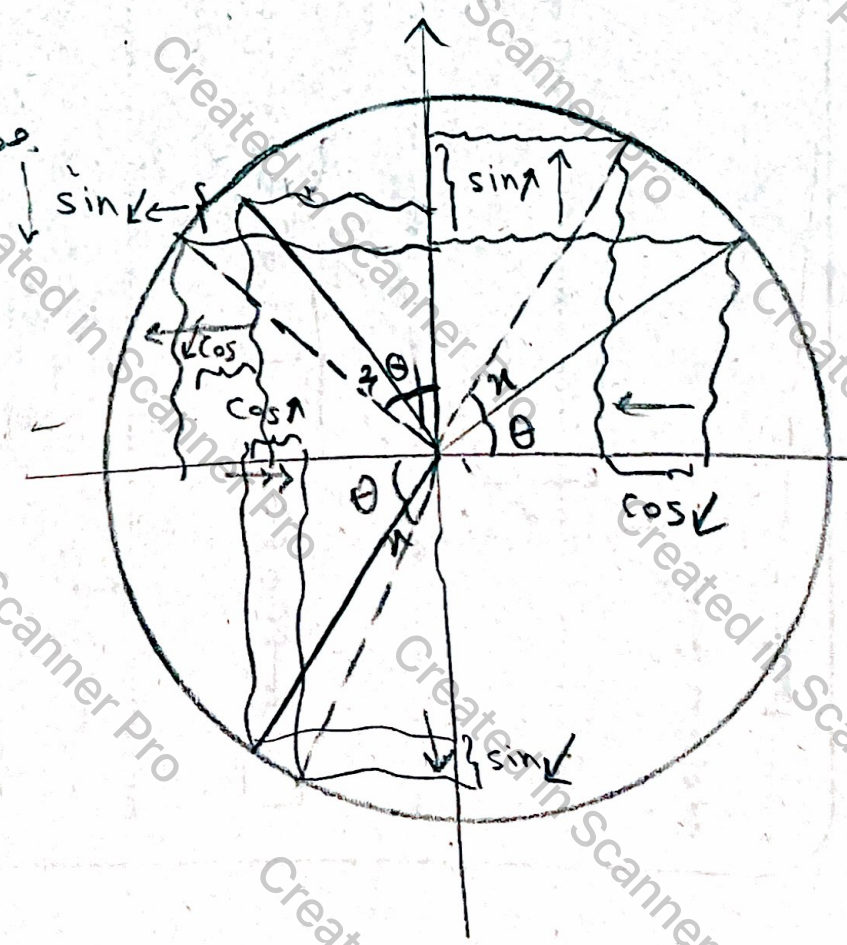
$$\text{فصل } AC = \sqrt{100 - 25} = \sqrt{75} = 5\sqrt{3} = BD$$

$$BD = BC + CD = 5\sqrt{3}$$

$$CD \rightarrow 5\sqrt{3} - 5$$

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

نام و سوج (و)



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$$\tan \theta = \frac{1}{2} \rightarrow 1 + \tan^2 = \frac{1}{\cos^2} \rightarrow 1 + \frac{1}{4} = \frac{1}{\cos^2} \Rightarrow \frac{5}{4} = \frac{1}{\cos^2}$$

$$\rightarrow 5 \cos^2 = 4 \rightarrow \cos^2 = \frac{4}{5} \rightarrow \cos = \frac{2}{\sqrt{5}}$$

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$$\cos^2 + \sin^2 = 1 \rightarrow \frac{4}{5} + \sin^2 = 1 \rightarrow \sin^2 = \frac{1}{5}$$

$$\sin = \frac{1}{\sqrt{5}}$$

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