

15 برایان باقی توجه!!

$$\frac{2V}{110} = \frac{21}{\pi} \Rightarrow \frac{2V\pi}{110} = 21 \Rightarrow 21 = \frac{2\pi C}{\epsilon_0} \quad \left(\frac{D}{110} = \frac{R_{\text{rad}}}{\pi} \right) \quad (1)$$

$$\frac{120}{240} = \frac{21}{\pi} \Rightarrow \frac{120\pi}{240} = 21 \Rightarrow 21 = \frac{20\pi}{V2} \quad (2)$$

$$\frac{0\pi}{12} = \frac{21}{240} \Rightarrow \frac{240 \times 0\pi}{12} = 21 \Rightarrow \frac{100\pi}{\pi} = 100 = 21 \quad (3)$$

$$\frac{\epsilon\pi}{9} = \frac{21}{240} \Rightarrow \frac{240 \times \epsilon\pi}{9} = 21 \Rightarrow 21 = 190 \quad (4)$$

$$\frac{120a}{9} = \frac{21}{240} = \frac{120a}{240} = \frac{21}{9} \quad 21 = \frac{120a}{10} \quad (1, 2, 5)$$

$$\frac{a\pi}{\pi} = \frac{y}{240} \Rightarrow \frac{240 \times a\pi}{\pi} = \pi y \quad \epsilon\omega a\pi = \pi y \quad y = \frac{\epsilon\omega a}{\pi}$$

(150 + 120 + 10)a = 110

$$\frac{120a}{10} + \epsilon\omega a + 10a = 110 \Rightarrow \frac{120a}{10} + 10a = 110 \Rightarrow \frac{120a}{10} = 110 \Rightarrow a = 110 \Rightarrow a = 110$$

1a = f

$$\frac{1}{r} \times \frac{\sqrt{2}}{r} - \frac{\sqrt{2}}{r} \times \frac{1}{r} - 1 + 2 = -1 + 2 = 1 \quad (2) \quad (الف)$$

$$\frac{\frac{2}{9} + 1 + 2}{\sqrt{2} - \frac{\sqrt{2}}{2}} = \frac{\frac{29}{9}}{\frac{2\sqrt{2}}{2}} = \frac{29}{2\sqrt{2}} = \frac{12}{2\sqrt{2}} \quad (3)$$

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

$$\sin \theta = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2} \Rightarrow \theta = 45^\circ \quad \tan 45^\circ = 1 \quad (4) \quad (ب)$$

$$\frac{r \times \frac{\sqrt{2}}{r} \left(1 - \frac{\epsilon}{9}\right)}{\left(1 - \frac{\epsilon}{9}\right) \left(1 - \frac{\epsilon}{9}\right)} = \frac{r\sqrt{2}}{\frac{2\sqrt{2}}{9}} = \sqrt{2} = \tan \theta$$

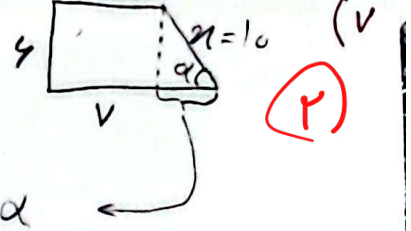
بر حسب رادیان مرخوايم

$$\theta = 45^\circ = \frac{\pi}{4} \quad (1, 2, 5)$$

$$\sin \theta = \omega \cos \theta \quad \frac{r(\omega \cos \theta) - \cos \theta}{\omega \cos \theta - \epsilon \cos \theta} = \frac{1\omega \cos \theta - \cos \theta}{\cos \theta} = \frac{1\epsilon \cos \theta}{\cos \theta} = 1\epsilon$$

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$$4 = \frac{9}{10} x \Rightarrow x = 10$$



$$\cos^2 \alpha = 1 - \frac{4^2}{10^2} = \frac{9}{10} \Rightarrow \cos \alpha = \frac{3}{\sqrt{10}}$$

$$\frac{3}{\sqrt{10}} \times 10 = 3\sqrt{10}$$

$$x = 4 + 4 + 10 = 18$$

$$\hat{A} = 90^\circ \Rightarrow AB = 10 \times \frac{1}{\sqrt{2}} = 5\sqrt{2} \quad BD = \frac{\sqrt{2}}{2} \times 10 = 5\sqrt{2}$$

$$AB = 5\sqrt{2}, AB = BC \Rightarrow BC = 5\sqrt{2} \quad DC = 5\sqrt{2} - 5\sqrt{2} = 0$$

9 الف (ب) ناحیه دوم $\checkmark$
 (1) $\checkmark$

$\sin u$ از صفر به 1 - $\downarrow$ و $\cos u$ از 1 به صفر $\uparrow$

$$\sin^2 u = 1 - \cos^2 u \Rightarrow 9\cos^2 u + \cos^2 u = 1$$

$$\Rightarrow 10\cos^2 u = 1$$

$$\cos^2 u = \frac{1}{10}$$

$$\cos u = \frac{\sqrt{10}}{10}$$

$$\Rightarrow \sin^2 u = 1 - \frac{1}{10} = \frac{9}{10}$$

$$\sin u = \frac{3}{\sqrt{10}} = \frac{3\sqrt{10}}{10}$$

$$\tan u = \frac{\sin u}{\cos u} = \frac{1}{3}$$

$$\cos u = 3\sin u$$

$$\sin u = \frac{3\sqrt{10}}{10}$$

$$1 + \tan^2 u = \frac{1}{\cos^2 u} \xrightarrow{\text{مربع}} \cos u = \frac{1}{\sqrt{10}} \rightarrow \sin u = \frac{\sqrt{10}}{10}$$