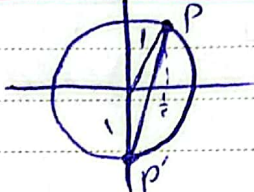


مردی کردیچانی < تکلیف شماره ۱۲

$$\frac{-\frac{\sqrt{3}}{r}a - \frac{\sqrt{3}}{r}b}{-\frac{1}{r}a + \frac{1}{r}b} = \frac{-\frac{\sqrt{3}}{r}(a+b)}{-\frac{1}{r}(a-b)} = \frac{\sqrt{3}(a+b)}{a-b} = \frac{-\sqrt{3}}{3} \quad (1)$$

$$\Rightarrow ra = -b \Rightarrow \frac{b}{a} = -r$$

$$\varphi_0 + 2\psi_0 = 2\psi_0 \Rightarrow$$


(2)

$$PP' = \sqrt{1 + 1 - 2 \times 1 \times \frac{\sqrt{3}}{r}} = \sqrt{2 - \frac{2\sqrt{3}}{r}} \Rightarrow h = 2 + \sqrt{2 + \sqrt{3}} \quad (3)$$

$$\frac{\pi}{9} \times \frac{11\pi_0}{\pi} = 2\pi_0 \Rightarrow \frac{11}{r_0 \min} \mid \begin{matrix} \pi_0 \\ 2\pi_0 \end{matrix} \Rightarrow r, r_0 \quad (4)$$

$$\left| \frac{11 \times M}{r} - \frac{r_0 \times r}{r} \right| = 2\pi_0 \Rightarrow \frac{11M - r_0 r}{r} = 2\pi_0 \quad (5)$$

$$\Rightarrow M = 2\pi_0 \Rightarrow \text{بعد از گذشت ۲۰ دقیقه}$$



$$\Rightarrow -\frac{\pi}{9} < x < \frac{\pi}{9} \Rightarrow -\frac{1}{r} < \sin x < \frac{1}{r} \Rightarrow -\frac{1}{r} < \frac{m-r}{a} < \frac{1}{r} \quad (6)$$

$$\Rightarrow \frac{a}{r} < m - r < a \Rightarrow \frac{1}{r} < m < 1$$

$$\frac{\cos 10^\circ - K \sin 10^\circ}{-\cos 10^\circ - Y \sin 10^\circ} = \mu$$

(4)

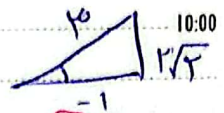
$$\Rightarrow \frac{1 - K \tan 10^\circ}{-1 - Y \tan 10^\circ} = \mu \Rightarrow -\mu - Y \tan 10^\circ = 1 - K \tan 10^\circ$$

$$\Rightarrow \frac{K}{\epsilon} = \mu + \frac{Y}{\epsilon} \Rightarrow K = 19 + Y = 22$$

$$\frac{\cos \alpha + \cos \alpha}{\cos \alpha - Y \tan \alpha} = \frac{Y \cos \alpha}{-\tan \alpha} = Y \cot \alpha$$

(V)

$$Y + Y \cos \alpha = 1 - \cos \alpha \Rightarrow Y \cos \alpha = -1 \Rightarrow \cos \alpha = \frac{-1}{Y}$$



$$\Rightarrow \cot \alpha = \frac{-1}{Y \sqrt{Y}} = \frac{-\sqrt{Y}}{\epsilon} \Rightarrow Y \cot \alpha = Y \times \frac{-\sqrt{Y}}{\epsilon} = \frac{-\sqrt{Y}}{\epsilon}$$



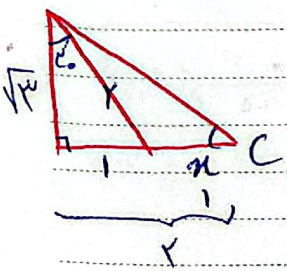
$$\frac{10 \times \pi \times R}{10} = \frac{9 \pi}{10} \times R' \Rightarrow \frac{Y}{\mu} R = R' \Rightarrow \frac{R_A}{R'_B} = \frac{\mu}{Y}$$

(A)

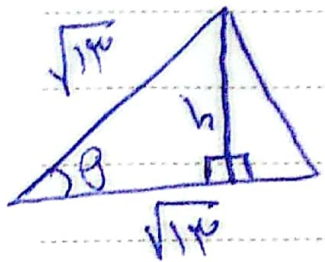
$$\frac{S_A}{S_B} = \left(\frac{R}{R'}\right)^2 = \frac{9}{\epsilon}$$

$$\cot \alpha = \sqrt{\epsilon} \quad \frac{\sqrt{\epsilon} \times (1 + \mu)}{Y} = \sqrt{\epsilon} \Rightarrow \mu = 1$$

(9)



$$\sin \gamma C = Y \cos C \sin C = Y \times \frac{\sqrt{\epsilon}}{\sqrt{Y}} \times \frac{Y}{\sqrt{Y}} = \frac{\epsilon \sqrt{\epsilon}}{Y}$$



$$\Rightarrow \sum \phi = 9 \rightarrow \sum_{\text{ext}} = 9 - 1 - 1 - 0 = 7 \Rightarrow 7d$$

$$\Rightarrow \frac{d}{r} = \frac{h \times \sqrt{140}}{r} \Rightarrow h = \frac{d}{\sqrt{140}}$$

$$\Rightarrow \sin \theta = \frac{h}{\sqrt{140}} \Rightarrow \frac{\frac{d}{\sqrt{140}}}{\sqrt{140}} = \frac{d}{140}$$

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