

۲۰. آفرین ضعیف خوب نوشتی !!

سری ۱۶

سری دوم در دست

$$\frac{D}{1\lambda_0} = \frac{G}{r_0} = \frac{Rad}{\pi}$$

الف) $\frac{r_0}{1\lambda_0} = \frac{Rad}{\pi} \Rightarrow r_0 rad = r_0 \pi \rightarrow rad = \frac{r_0 \pi}{r_0}$

ب) $\frac{1\lambda_0 r_0}{1\lambda_0 r_0} = \frac{Rad}{\pi} \Rightarrow r_0 rad = r_0 \pi \rightarrow rad = \frac{r_0 \pi}{r_0}$

ج) $\frac{\frac{\omega \pi}{r_0}}{\pi} = \frac{D}{1\lambda_0} \rightarrow 1\lambda_0 (\omega) = D \times r_0 \rightarrow D = \omega a^\circ$

د) $\frac{\frac{r_0 \pi}{a}}{\pi} = \frac{D}{1\lambda_0} \rightarrow \frac{r_0}{a} = \frac{D}{1\lambda_0} \rightarrow D = r_0 a^\circ$

$$\frac{\frac{1\lambda_0 a}{a}}{r_0} = \frac{D}{1\lambda_0} \rightarrow 1\lambda_0 D = 1\lambda_0 (1\lambda_0) a \quad \frac{a\pi}{\pi} = D$$

$$D = 1\lambda_0 a^\circ \quad D = r_0 a^\circ$$

$2r_0 a^\circ + 1\lambda_0 a^\circ + 1\lambda_0 a^\circ = 1\lambda_0 \rightarrow r_0 a^\circ = 1\lambda_0 \rightarrow a = \frac{1\lambda_0}{r_0}$

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

ب) $\frac{(\frac{1}{\sqrt{r}})^2 + 1 + (\sqrt{r})^2}{\sqrt{r} - \frac{1}{\sqrt{r}}} = \frac{\frac{1}{r} + 1 + r}{\frac{r-1}{\sqrt{r}}} = \frac{\frac{1}{r}}{\frac{r-1}{\sqrt{r}}} = \frac{1\sqrt{r}}{r}$

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

$\tan \theta = \frac{1}{\sin \theta} \rightarrow 1 + \cot^2 \theta = \frac{1}{\sin^2 \theta} \rightarrow 1 + \cot^2 \theta = \frac{1}{\frac{1}{r}} = r$

$\cot^2 \theta = r - 1$

$\cot \theta = 1$

$\tan \theta = 1$

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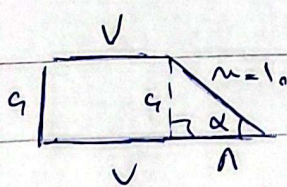
$$\frac{r \left(\frac{1}{\mu} \right) \left(1 - \frac{1}{\mu} \right)}{\left(1 - \frac{1}{\mu} \right)^2} = \frac{\frac{r}{\mu}}{\frac{1}{\mu}} = \frac{r}{1} = \frac{r}{\mu} \cdot \mu \quad (2)$$

$$\frac{q_0}{\mu} = \frac{\text{Rad}}{\pi} \rightarrow \pi = \mu \text{ Rad} \rightarrow \text{Rad} = \frac{\pi}{\mu} \quad \left(\frac{\pi}{\mu} \right) = q_0 = \theta \xrightarrow{\text{opp}} \tan \theta \quad (3)$$

$$1 + \tan^2 \theta = \frac{1}{\cos^2 \theta} \rightarrow \cos^2 \theta = \frac{1}{19} \rightarrow \cos \theta = \frac{1}{\sqrt{19}} \quad (4)$$

$$\cos^2 \theta + \sin^2 \theta = 1 \rightarrow \sin^2 \theta = \frac{18}{19} \rightarrow \sin \theta = \frac{\sqrt{18}}{\sqrt{19}}$$

$$\frac{\frac{18}{\sqrt{19}} - \frac{1}{\sqrt{19}}}{\frac{18}{\sqrt{19}} - \frac{2}{\sqrt{19}}} = \frac{\frac{17}{\sqrt{19}}}{\frac{16}{\sqrt{19}}} = \left[\frac{17}{16} \right] \quad \text{, cos } \theta = (+) \tan \theta \quad \begin{matrix} + \text{ opp} \\ - \text{ opp} \end{matrix} \rightarrow \text{Re Sin}$$

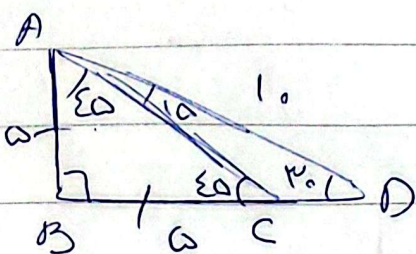


$$\sin \alpha = \frac{q}{1.0}$$

$$\sin = \frac{\text{opp}}{\text{hyp}} \Rightarrow \frac{q}{1.0} = \frac{q}{1.0} \rightarrow \mu = 1.0 \quad (5)$$

$$1.0^2 - q^2 = 1 - q^2 \rightarrow \sqrt{1 - q^2} = 1$$

$$\underline{\text{len}} = 1 + 1 + 1 + q + 1 = 4 + q$$



$$\sin \theta = \frac{m}{1.0} = \frac{1}{\mu} \rightarrow \mu = 1 \quad (6)$$

$$1.0^2 - a^2 = BD^2 \rightarrow \sqrt{1 - a^2} = BD$$

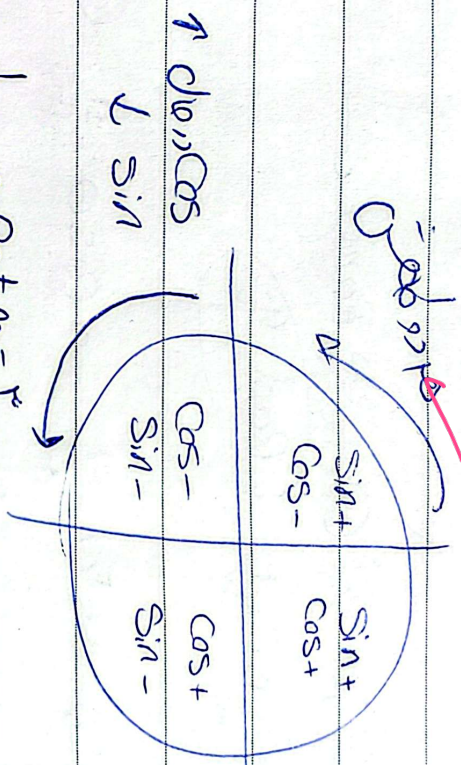
$$CD = BD - BC$$

$$\sqrt{1 - a^2} = a$$

$$a(\sqrt{1 - a^2}) \quad \leftarrow \checkmark$$

Part 1 →

Part 2 →



$$\tan = \frac{1}{r} \rightarrow \cot a = r \quad (10)$$

$$1 + \cot^2 a = \frac{1}{\sin^2 a} \quad 1 + a = \frac{1}{\sin^2 a} \rightarrow \sin^2 a = \frac{1}{10} \quad (11)$$

$$\sin a = \frac{-1}{\sqrt{10}} \quad \sin a = \frac{1}{\sqrt{10}}$$