

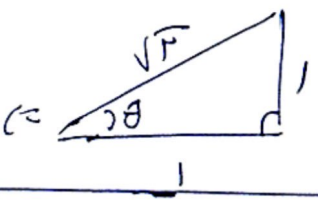
بازن درونی / گسترش فضا ۲۰

(۷) $\frac{r}{q} \times \lambda_0 = \lambda_0$	(۸) $\frac{\lambda_0}{1r} \times \lambda_0 = \frac{\lambda_0^2}{1r}$	(۹) $\frac{1r\delta}{1\lambda_0} = \frac{r\delta}{1r\delta}$ $\frac{r\delta}{1r\delta} \times \pi = \frac{r\delta\pi}{1r\delta}$ Rad	(۱۰) بازن درونی $\frac{r\delta}{1\lambda_0} = \frac{r}{r_0}$ $\frac{r}{r_0} \times \pi = \frac{r\pi}{r_0}$ Rad
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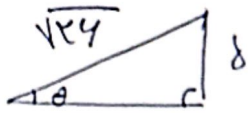
$10a, \frac{1r\delta a}{q} G, \frac{a\pi}{\lambda} \text{ Rad} \Rightarrow \frac{1r\delta a}{q} = \frac{\delta a}{1r} \times \lambda_0 = 1r\delta a$
 $\frac{\frac{a\pi}{\lambda}}{\frac{a}{1}} = \frac{a}{\lambda} \times \lambda_0 = 1r\delta a$
 $10a + 1r\delta a + 1r\delta a = \lambda_0 \quad \boxed{a = \frac{\lambda_0}{2}}$

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

$0 < \theta < 90^\circ \quad -\sin r_0 \cdot \cos q_0 + \cos r_0 \cdot \sin q_0 = \sin^2 \theta$
 $(-\frac{1}{\epsilon} \times \frac{1}{r}) + (\frac{\sqrt{r}}{\epsilon} \times \frac{\sqrt{r}}{r}) = -\frac{1}{\epsilon} + \frac{r}{\epsilon} = \frac{r}{\epsilon} = \frac{1}{r}$
 $\sin^2 \theta = \frac{1}{r} \quad \sin \theta = \frac{1}{\sqrt{r}}$
 $\tan \theta = 1 \quad \theta = 45^\circ$



$\frac{r \tan r_0 (1 - \tan^2 r_0)}{(1 - \cot^2 q_0)^2} = \frac{\frac{r}{\sqrt{r}} \times \frac{r}{r}}{(\frac{r}{r})^2} = \frac{\frac{r}{\sqrt{r}}}{\frac{r}{r}} = \sqrt{r}$
 $\tan \theta = \sqrt{r} \Rightarrow \theta = 45^\circ \Rightarrow \frac{1}{r}$



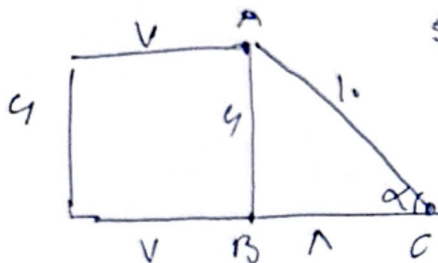
$$\sin \theta = \frac{\delta}{\sqrt{4}}$$

$$\cos \theta = \frac{1}{\sqrt{4}}$$

$$\left(\frac{\sqrt{4} \cdot \frac{\delta}{\sqrt{4}}}{\sqrt{4}} \right) - \frac{1}{\sqrt{4}} = \frac{\frac{1\delta}{\sqrt{4}}}{\frac{1}{\sqrt{4}}} = 1\delta$$

(P) ✓

(4)

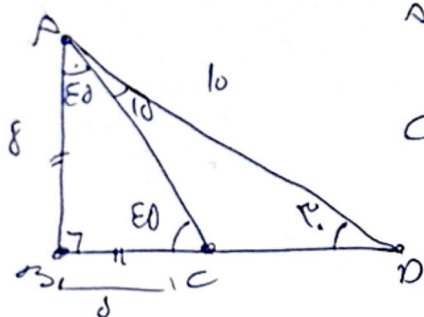


$$\sin \alpha = \frac{4}{5} = \frac{4}{10} \quad AC = 10 \quad BC = 1$$

$$P = 1 + 1 + 4 + 1 = 7$$

(P) ✓

(4)

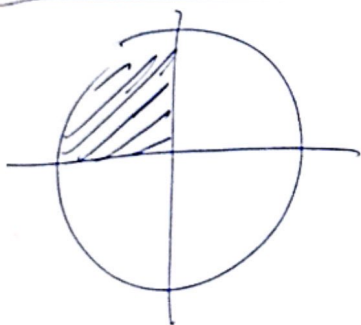


$$AB = \frac{1}{\sqrt{2}} \times 10 = d \quad BC = \sqrt{\frac{1}{2}} \times 10 = d\sqrt{2}$$

$$CD = BD - BC \Rightarrow d\sqrt{2} - d = d(\sqrt{2} - 1)$$

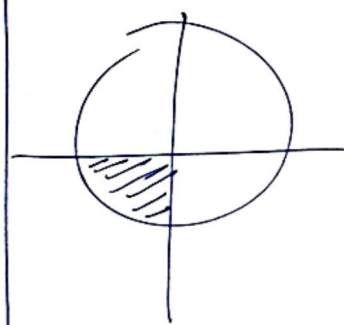
(P) ✓

(4)



$\sin \theta$

(P) ✓



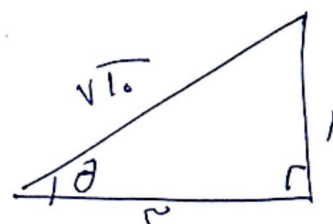
$\cos \theta$

(4)

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

$$\sin \theta = \frac{-1}{\sqrt{10}}$$

(P) ✓



(4)