

$$\frac{a \sin \frac{\pi}{4} + b \cos \frac{\pi}{4}}{a \sin \frac{11\pi}{4} + b \cos \frac{\pi}{4}} = \tan \frac{\pi}{4}$$

19/12  سوال 1

2

$$\frac{a \sin(\pi + \frac{\pi}{4}) + b \cos(\pi + \frac{\pi}{4})}{a \sin(\frac{7\pi}{4}) + b \cos \frac{\pi}{4}} = \tan(\pi - \frac{\pi}{4})$$

$$\frac{-a \sin \frac{\pi}{4} - b \cos \frac{\pi}{4}}{a \sin \frac{\pi}{4} + b \cos \frac{\pi}{4}}$$

$$\sin \frac{\pi}{4} = \frac{\sqrt{2}}{2}$$

$$\cos \frac{\pi}{4} = \frac{\sqrt{2}}{2}$$

$$\cos \frac{\pi}{4} = \frac{1}{\sqrt{2}}$$

$$\frac{-\frac{\sqrt{2}}{2}a - b \frac{\sqrt{2}}{2}}{-\frac{1}{\sqrt{2}}a + \frac{1}{\sqrt{2}}b} = -\frac{\sqrt{2}}{2}$$

فائل
دراپس سے

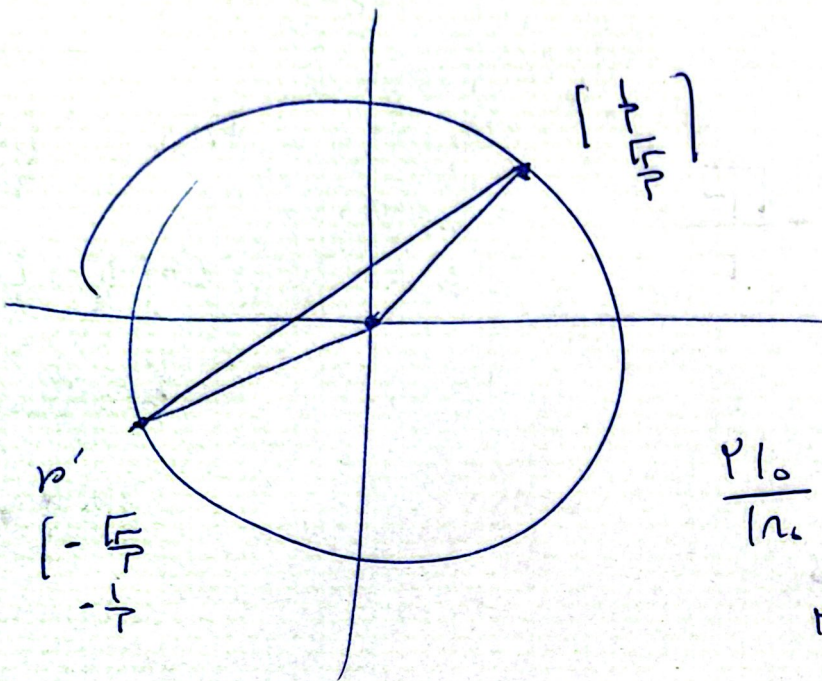
$$-\frac{\sqrt{2}}{2}a - \frac{\sqrt{2}}{2}b = \frac{1}{\sqrt{2}}a - \frac{1}{\sqrt{2}}b$$

$$-ra = b$$

$$\frac{b}{a} = -\frac{r_0}{a} = (-r)$$

سوال ۲

۲



$$\frac{r_{10}}{r_n} = \frac{K}{\pi}$$

$$\frac{r_{10} \pi}{r_n} = \frac{V \pi}{2}$$

$$\sqrt{\left(\frac{1}{2} + \frac{\sqrt{3}}{2}\right)^2 + \left(\frac{\sqrt{3}}{2} + \frac{1}{2}\right)^2}$$

$$\sqrt{r^2 \left(1 + \frac{\sqrt{3}}{2}\right)^2} = \sqrt{r^2} \cdot \frac{1 + \sqrt{3}}{2} = \left(\frac{\sqrt{3} + \sqrt{3}}{2} + r\right)$$

$$\frac{0}{r_n} = \frac{\frac{\pi}{9}}{\frac{\pi}{11}} \Rightarrow \frac{1}{9} = \frac{0}{r_n} \Rightarrow 0 = r_n$$

سوال ۳

۱، ۵

$$r \propto \frac{1}{n} (= 12)$$

$$r:2$$

دقت ۱ است ۲ است یعنی عقرب ساعت ۲ و دقیقه ۱۲ عدد ۱۲ است
 دقت ۲ دقیقه ۱۲ ساعت ۲:۰۰ یعنی ۱۲ × ۲ = ۲۴ چون جواب آمدی ساعت ۲۴ نصف دقیقه
 ساعت ۲:۰۰ است ۴۰ بود است

$$\left| \frac{11M}{P} - \omega H \right| = r_0 \rightarrow \frac{11M}{P} - \omega \cdot H = \pm r_0$$

سوال ۴

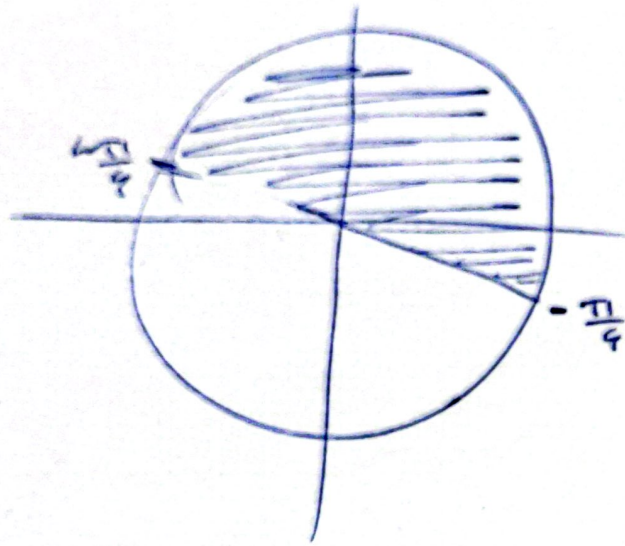
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$$\frac{11M}{P} - r_0 = H_0 \rightarrow \frac{11M}{P} = H_0 \rightarrow m = H_0$$

درصورت بار

$$\frac{11M}{P} - r_0 = -r_0 \rightarrow \frac{11M}{P} = r_0 \rightarrow m = \frac{L \cdot \epsilon_0}{1.1}$$

سوال ۴



$$\max \sin = 1$$

$$\min \sin = -\frac{1}{2}$$

$$\frac{m-r}{2} = 1 \rightarrow m-r=2 \rightarrow m=1$$

$$\frac{m-r}{2} = -\frac{1}{2} \rightarrow \frac{r-m}{2} = \frac{1}{2} \rightarrow r-m=1$$

$$r-m=1$$

$$m = \frac{1}{2}$$

$$\frac{1}{2} < m < 1$$

$$\rightarrow (1), (2), (3), (4), (5), (6), (7), (8), (9), (10), (11)$$

$$\checkmark \text{ صحیح است } \wedge$$

سوال ۶

$$\frac{\sin(140) + k \cos(140)}{\cos(140) + r \sin(140)} = r$$

$$\frac{\sin(90 + 140) + k \cos(270 - 140)}{\cos(180 - 140) + r \sin(180 + 140)} = r$$

۲

$$\frac{\frac{\cos 140}{\cos 140} + \frac{-k \sin 140}{\cos 140}}{\frac{-\cos 140}{\cos 140} - \frac{r \sin 140}{\cos 140}} = r$$

$$\frac{1 - k \tan 140}{-1 - r \tan 140} = r \rightarrow 1 - k \tan 140 = -r - r^2 \tan 140$$
$$-k \tan 140 + r^2 \tan 140 = -r - 1$$

$$(r^2 - k) \tan 140 = -r - 1 \rightarrow r^2 - k = -1.9 \rightarrow -k = -r^2 - 1.9$$

✓ $k = r^2 + 1.9$

$$\frac{\tan\left(\frac{\pi}{2} - \alpha\right) - \cot(\pi - \alpha)}{\cot\left(\frac{\pi}{2} - \alpha\right) + r \tan(\pi - \alpha)} =$$

$$\frac{\cot \alpha + \cot \alpha}{+ \tan \alpha - r \tan \alpha}$$

$$\frac{\frac{1}{r\sqrt{r}} + \frac{1}{r\sqrt{r}}}{r\sqrt{r} - r\sqrt{r}} = \frac{\frac{1}{\sqrt{r}}}{-\sqrt{r}} = \left(-\frac{1}{r}\right)$$

$$\begin{aligned}\tan &= r\sqrt{r} \\ \cot &= \frac{1}{r\sqrt{r}}\end{aligned}$$

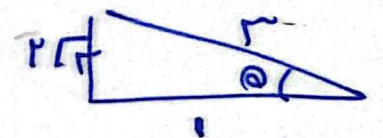
(10)

$$\frac{1 - \cos}{1 + \cos} = r$$

$$1 - \cos = r + r \cos$$

$$r \cos = -1$$

$$\cos = -\frac{1}{r}$$



$$\sin = \frac{r\sqrt{r}}{r}$$

+ r \cos \alpha \rightarrow

$$\frac{I_0 A}{I_0 b} = \frac{\pi}{\pi} \rightarrow n = \frac{I_0 A \pi}{I_0 b} \rightarrow \sqrt{\frac{\pi}{b}}$$

$$R_A \propto \sqrt{\frac{I_0}{I_1}} = R_B \propto \frac{A \pi}{I_1}$$

$$\frac{R_A}{R_B} = \frac{\frac{A \pi}{I_1}}{\sqrt{\frac{I_0}{I_1}}} = \sqrt{\frac{A}{I_0}}$$

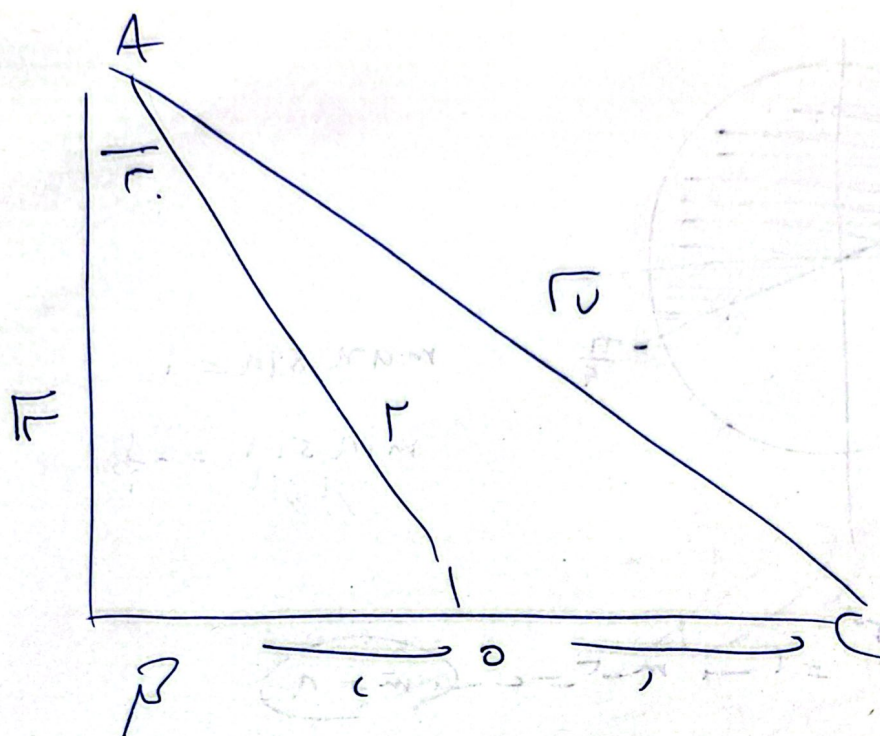
$$\frac{A_A}{A_B} = \left(\sqrt{\frac{A}{I_0}}\right)^2 = \left(\frac{A}{I_0}\right)$$

$$\checkmark \quad \frac{A}{I_0}$$

Ans

$$I_A = I_B$$

$$n_A \propto n \propto \sqrt{\frac{A}{I_0}}$$



9W2

4

$$AB^2 = AD^2 + BD^2$$

$$AB^2 = r^2 + \epsilon^2 \rightarrow AB = \sqrt{r^2 + \epsilon^2}$$

$$BC = AB + AC = \sqrt{r^2 + \epsilon^2} + \sqrt{v}$$

$$BC = \sqrt{r^2 + \epsilon^2} + \sqrt{v}$$

$$AC^2 = AB^2 + BC^2 = r^2 + \epsilon^2 + v$$

$$AC = \sqrt{v}$$

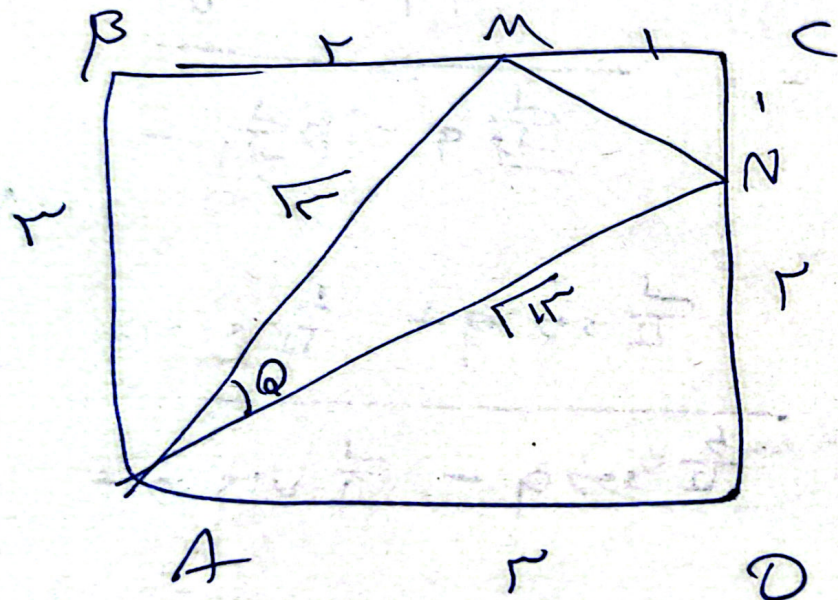
$$\sin C = \frac{r}{\sqrt{v}}$$

$$\cos C = \frac{\epsilon}{\sqrt{v}}$$

$$\sin^2 C = \frac{r^2}{v}$$

$$\frac{r^2}{v} = \frac{r^2}{v} \quad \left(\frac{r^2}{v} \right)$$

(1. جول)



$$AM = \sqrt{r^2 + 1} = \sqrt{r}$$

$$MN = \sqrt{1^2 + 1} = \sqrt{2}$$

$$\frac{1}{r} \times \frac{1}{r} \times \sin \theta = \frac{1}{r}$$

$$\sin \theta = \frac{1}{r}$$

$$\cos \angle AON = \frac{\frac{1}{r} \times r}{1} = \frac{1}{r}$$

$$\cos \angle BMA = \frac{r \times r}{1} = r$$

$$\cos \angle MCN = \frac{1 \times 1}{1} = \frac{1}{r}$$

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

$$\cos \angle AMN = \frac{r \times r}{1} = \frac{1}{r}$$