

$$\frac{1}{\sqrt{2}}$$

$$\sin \frac{7\pi}{4} = -\frac{\sqrt{2}}{2} \quad \cos \frac{7\pi}{4} = \frac{\sqrt{2}}{2} \quad \text{میانوی$$

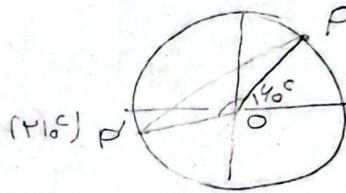
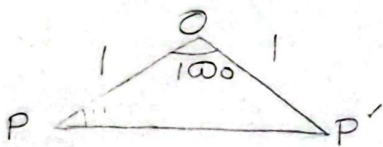
$$\sin \frac{11\pi}{4} = -\frac{1}{2} \quad \cos \frac{11\pi}{4} = \frac{1}{2} \quad \tan \frac{11\pi}{4} = -\frac{\sqrt{2}}{2}$$

$$\rightarrow \frac{-\frac{a\sqrt{2}}{2} - \frac{b\sqrt{2}}{2}}{-\frac{a}{2} + \frac{b}{2}} = -\frac{\sqrt{2}}{2} \rightarrow \frac{\sqrt{2}a - \sqrt{2}b}{-a + b} = -\frac{\sqrt{2}}{2} \rightarrow \sqrt{2}a - \sqrt{2}b = -\frac{\sqrt{2}}{2}(-a + b)$$

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

$$\cos \theta = \frac{1}{2} \rightarrow \sin \theta = \frac{\sqrt{3}}{2}$$

$$\theta = 60^\circ$$



$$OP = 1 \quad OP' = 1$$

$$PP'^2 = OP^2 + OP'^2 - 2(OP)(OP')\cos \theta$$

$$\rightarrow PP'^2 = 1 + 1 - 2(1)(1)\cos 60^\circ = 2 - 1 = 1$$

$$PP' = \sqrt{1} = 1 \rightarrow \text{مسافت} = 1 + \sqrt{1 + \sqrt{3}}$$

$$\frac{\pi}{4} \quad 40 \text{ min}$$

$$\frac{\pi}{4} \times 40 \times \frac{4}{\pi} = 40$$

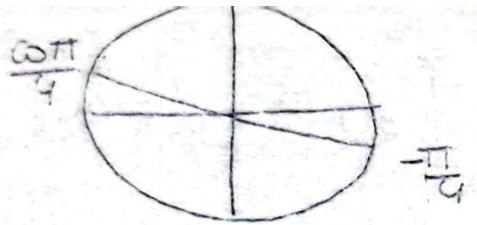
مسافت است، هر یک ساعت $\frac{\pi}{4}$ می چرخد

مسافت 40

$$a = |\omega_m - \omega \cdot h|$$

$$|\omega_m - \omega \cdot h| = r \rightarrow \omega_m = 11 \rightarrow m < 2$$

$$\rightarrow \omega_m = 7 \rightarrow m < 14 \text{ در حال}$$



$$\begin{aligned} -\frac{1}{\mu} &< \frac{m-\mu}{\beta} \leq 1 \\ -\frac{\beta}{\mu} &< m-\mu \leq \beta \\ \frac{1}{\mu} &< m \leq \mu \end{aligned}$$

-a

2

$$\frac{\sin(90^\circ + \omega) + k \cos(\mu \omega - 10^\circ)}{\cos(110^\circ - 10^\circ) + \mu \sin(110^\circ + 10^\circ)}$$

$$= \frac{\cos \omega^\circ - k \sin \omega^\circ}{- \cos \omega^\circ - \mu \sin \omega^\circ} \div \cos \omega^\circ$$

-y

$$\frac{1 - k \tan \omega^\circ}{-1 - \mu \tan \omega^\circ}$$

$$= \frac{1 - \frac{1}{\mu} k}{-1 - \frac{1}{\mu}}$$

$$= \frac{1 - \frac{1}{\mu} k}{-1 - \frac{1}{\mu}} = 1 - \frac{1}{\mu} k$$

$$\frac{1}{\mu} k = \frac{1}{\mu} \Rightarrow k = \mu$$

2

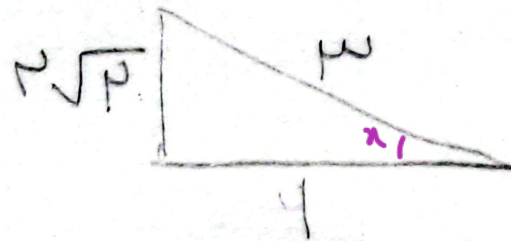
$$\tan\left(\frac{\pi}{2} - \alpha\right) = \cot \alpha \quad \cot(\pi - \alpha) = -\cot \alpha \quad (1, 2)$$

$$\cot\left(\frac{\mu\pi}{\nu} - \alpha\right) = \tan \alpha \quad \tan(\mu\pi - \alpha) = -\tan \alpha$$

$$\rightarrow \frac{-\cancel{\nu} \cot \alpha}{\cancel{\nu} \cot \alpha} = -\frac{\mu}{\sqrt{\nu}} \times \frac{-\mu}{\mu\sqrt{\nu}} = \frac{9}{14}$$

$$\mu + \mu \cos \alpha = 1 - \cos \alpha$$

$$\rightarrow \mu \cos \alpha = -1 \rightarrow \cos \alpha = -\frac{1}{\mu}$$



$$\tan \alpha = \frac{-\mu\sqrt{\nu}}{\mu} \quad \text{دقت کن دقت!}$$

$$\cot \alpha = -\frac{\mu}{\mu\sqrt{\nu}}$$

$$\tan \alpha = -\mu\sqrt{\nu}$$

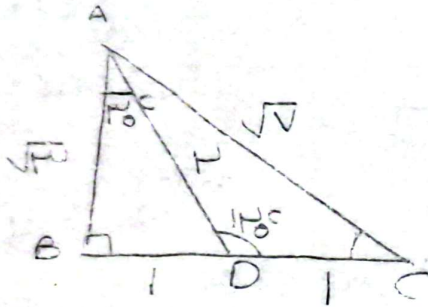
$$\cot \alpha = -\frac{1}{\mu\sqrt{\nu}}$$

$$\rightarrow -\cancel{\nu} \cot \alpha = -\cancel{\nu} \times \frac{1}{\cancel{\nu}} = -\frac{1}{2}$$

$$l = \theta r = \frac{10\pi}{180} r_A = \frac{9\pi}{180} r_B \rightarrow r_B = \frac{2}{3} r_A$$

$$r_A = \frac{3}{2} r_B$$

$$\frac{SA}{SB} = \frac{9}{4}$$



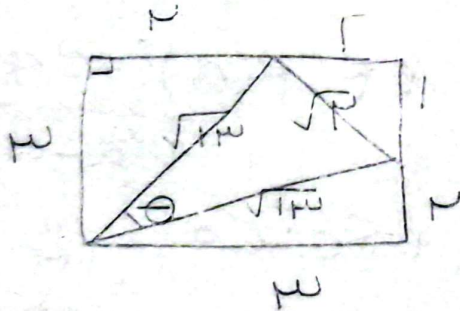
$$\frac{1}{2} \times \sqrt{5} \times BC = \sqrt{5} \rightarrow BC = 2$$

$$AC = \sqrt{1 + 4} = \sqrt{5}$$

$$\sin \hat{C} = \frac{3}{\sqrt{5}}$$

$$\cos \hat{C} = \frac{2}{\sqrt{5}}$$

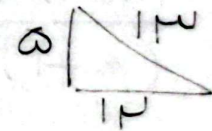
$$\begin{aligned} \sin \hat{C} &= \sqrt{5} \sin \hat{C} \cos \hat{C} \\ &= \sqrt{5} \times \frac{3}{\sqrt{5}} \times \frac{2}{\sqrt{5}} = \frac{6}{\sqrt{5}} \end{aligned}$$



$$N = \frac{1 \times 1 + 1 \times 1}{2 \times 2} - \frac{1(\sqrt{2})(\sqrt{2}) \cos \theta}{2 \times 2}$$

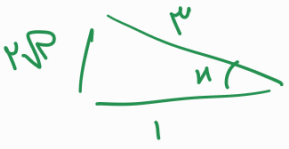
$$\cos \theta = \frac{2}{3}$$

$$\sin \theta = \frac{3}{4}$$



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

$$\frac{\cot n + \cot n}{\tan n - r \tan n} = \frac{r \cot n}{-\tan n} = -r \cot n$$


 $\rightarrow \cot n = -\frac{1}{r} \rightarrow -r \cot n = -r \times \frac{1}{r} = -\frac{1}{2}$