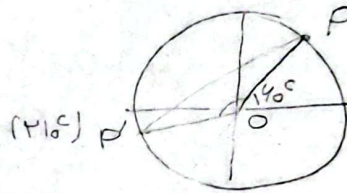
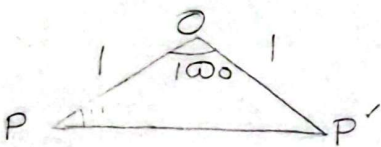


1- $\sin \frac{\pi}{4} = -\frac{\sqrt{2}}{2}$ $\cos \frac{\pi}{4} = -\frac{\sqrt{2}}{2}$ میدانوی

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

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

$\cos \theta = \frac{1}{2} \rightarrow \sin \theta = \frac{\sqrt{3}}{2}$
 $\theta = 60^\circ$



$OP=1 \quad OP'=1$

$PP'^2 = OP^2 + OP'^2 - 2(OP)(OP')\cos \hat{O}$

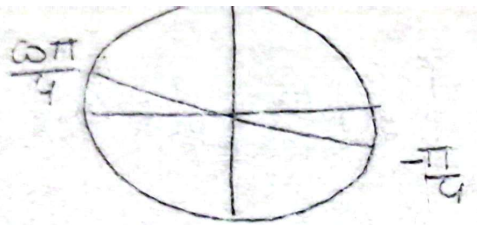
$\rightarrow PP'^2 = 1 + 1 - 2(1)(1) - \frac{\sqrt{3}}{2} = 2 - \sqrt{3}$
 $PP' = \sqrt{2 - \sqrt{3}} \rightarrow \text{مسافت} = 2 + \sqrt{2 - \sqrt{3}}$

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

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

مسافت سواره را به ساحت $\frac{\pi}{4}$ می چسبیم

ساحت 40



$$\begin{aligned} \frac{1}{\mu} &> \frac{m-\mu}{\mu} \leq 1 \\ -\frac{3}{2} &< m-\mu \leq 0 \\ \frac{1}{\mu} &< m \leq 1 \end{aligned}$$

-8

$$\frac{\sin(90^\circ + \omega) + k \cos(\mu \omega - \omega)}{\cos(180^\circ - \omega) + \mu \sin(180^\circ + \omega)} = \frac{\cos \omega - k \sin \omega}{-\cos \omega - \mu \sin \omega} \div \cos \omega$$

-9

$$\begin{aligned} \frac{1 - k \tan \omega}{-1 - \mu \tan \omega} &= \frac{1 - \frac{1}{\mu} k}{-1 - \frac{1}{\mu}} = \mu \rightarrow \frac{1 - \frac{1}{\mu} k}{-1 - \frac{1}{\mu}} = 1 - \frac{1}{\mu} k \\ \frac{1}{\mu} k &= \frac{1}{\mu} \quad \Rightarrow \quad k = \mu \end{aligned}$$

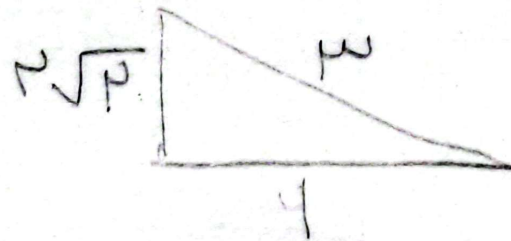
$$\tan\left(\frac{\pi}{2} - \alpha\right) = \cot \alpha \quad \cot(\pi - \alpha) = -\cot \alpha$$

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

$$\rightarrow \frac{\mu \cot \alpha}{-\tan \alpha} = -\frac{\mu}{\sqrt{\mu}} \times \frac{-\mu}{\mu\sqrt{\mu}} = \frac{9}{\mu}$$

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

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



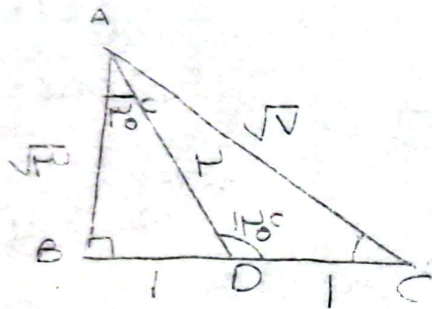
$$\tan \alpha = \frac{-\mu\sqrt{\mu}}{\mu}$$

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

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

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

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



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

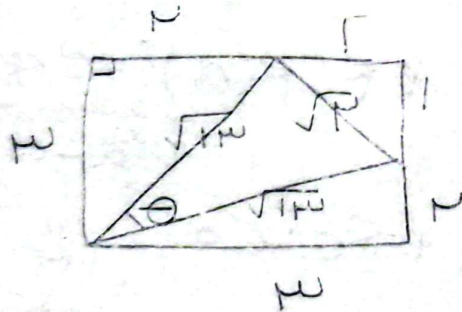
$$AC = \sqrt{2 + 2} = \sqrt{4}$$

$$\sin \hat{C} = \frac{\sqrt{2}}{2}$$

$$\cos \hat{C} = \frac{1}{\sqrt{2}}$$

$$\sin \hat{C} = \frac{1}{\sqrt{2}} \sin \hat{C} \cos \hat{C}$$

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



$$N = \frac{1 \times 2 + 1 \times 3}{2 \times 4} - \frac{2(\sqrt{1}) (\sqrt{1}) \cos \theta}{2 \times 4}$$

$$\cos \theta = \frac{1}{2}$$

$$\sin \theta = \frac{\sqrt{3}}{2}$$

