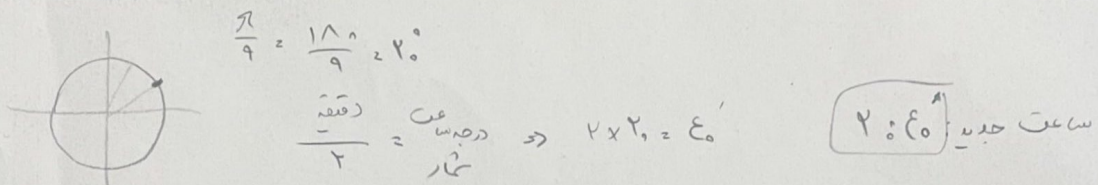
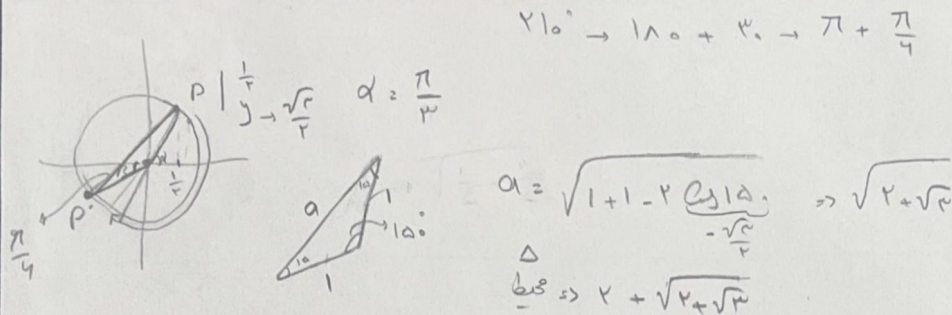


$$\frac{a \sin \frac{\pi}{4} + b \cos \frac{\pi}{4}}{a \sin \frac{11\pi}{4} + b \cos \frac{\pi}{2}} = \frac{-\frac{\sqrt{2}}{2}a - \frac{\sqrt{2}}{2}b}{-\frac{1}{2}a + \frac{1}{2}b} = \frac{-\sqrt{2}(a+b)}{-\frac{1}{2}(a-b)} = -\frac{\sqrt{2}}{\frac{1}{2}}$$

$$\Rightarrow \frac{a+b}{a-b} = -\frac{1}{\frac{1}{2}} \Rightarrow 2a+2b = -a+b \quad \frac{b}{a} = \frac{-2a}{a} = -2 \quad \text{جواب: } \boxed{-2}$$

$2b = -3a$
 $b = -\frac{3}{2}a$

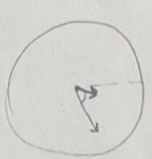


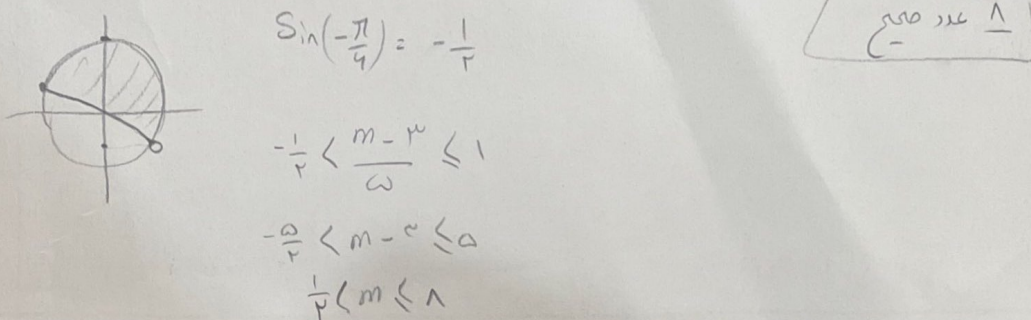
$v_0 = \left| \frac{q_0}{m_0 h} - \omega_1 \Delta M \right| \rightarrow v_0 = |q_0 - \omega_1 \Delta M|$

$v_0 \geq \omega_1 \Delta M \Rightarrow M = \frac{v_0}{\omega_1} \rightarrow 14:00$

$110 = \omega_1 \Delta M \rightarrow M = 20 \rightarrow 11:20$

$\boxed{3:20}$





$$\frac{\sin(1-a) + K \cos(1-a)}{\cos(1-a) + r \sin(1-a)} = \frac{\cos 1a - K \sin 1a}{-\cos 1a - r \sin 1a} \xrightarrow{\div \cos} \frac{1 - K \tan 1a}{-1 - r \tan 1a} = r$$

$$\Rightarrow \frac{1 - \frac{1}{2}K}{-1 - \frac{1}{r}} = r \Rightarrow -\frac{q}{r} = 1 - \frac{1}{2}K \Rightarrow \frac{1}{2}K = \frac{11}{r} \Rightarrow \boxed{K = 22}$$

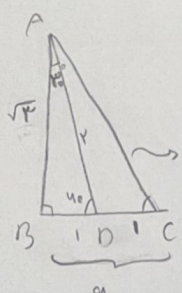
$\tan\left(\frac{\pi}{r} - \alpha\right) = \cot(\pi - \alpha)$
 $\cot\left(\frac{11\pi}{r} - \alpha\right) + r \tan(\pi - \alpha)$

$\frac{\cot \alpha + \cot \alpha}{\tan \alpha - r \tan \alpha} = \frac{r \cot \alpha}{-\tan \alpha}$
 $\frac{r}{-1/r} = -\frac{11}{14} \Rightarrow \boxed{\frac{r}{A}}$

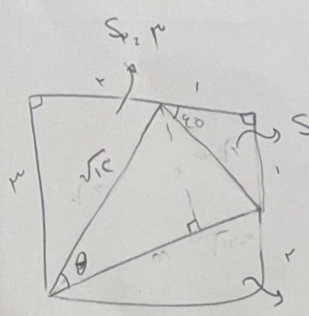
$\frac{1 - \cos \alpha}{1 + \cos \alpha} = \frac{r \sin \frac{\pi}{r}}{r \cos \frac{\pi}{r}} \Rightarrow \tan \frac{\pi}{r} = r$
 $\tan \alpha = \frac{r \tan \alpha}{1 - \tan^2 \alpha} \rightarrow \tan \alpha = \frac{r \times r}{1 - r} = \frac{r}{r}$

$$\frac{10\pi}{1\pi} = \frac{R}{\pi} \Rightarrow \frac{4}{10}\pi \Rightarrow \theta = \frac{L}{R} \Rightarrow A \rightarrow \frac{4\pi}{10} = \frac{L}{R_A} \rightarrow R_A = \frac{10}{4}\pi L$$

$$B \rightarrow \frac{9\pi}{10} = \frac{L}{R_B} \Rightarrow R_B = \frac{10}{9}\pi L \Rightarrow \frac{S_A}{S_B} = \left(\frac{r_A}{r_B}\right)^2 \rightarrow \left(\frac{\frac{10}{4}\pi L}{\frac{10}{9}\pi L}\right)^2 = \boxed{\frac{4}{9}}$$



$\frac{\sqrt{r} \cdot q}{r} = \sqrt{r} \Rightarrow q = r$
 $\sqrt{r^2 + \epsilon} \Rightarrow \sqrt{r}$
 $\sin \hat{C} = \frac{\sqrt{r}}{\sqrt{r}}$
 $\cos \hat{C} = \frac{r}{\sqrt{r}}$
 $\sin r \hat{C} = r \sin \hat{C} \cos \hat{C}$
 $\frac{r \sqrt{r}}{\sqrt{r}} = \frac{r}{\sqrt{r}}$



$a = S_{\square} - S_1 - S_2 - S_3 = S_{\Delta}$
 $4 - r - r - \frac{1}{r} = \frac{a}{r}$
 $\frac{1}{r} \times \sqrt{r} \times \sqrt{r} = \sin \theta = \frac{a}{r}$
 $\boxed{\sin \theta = \frac{a}{r}}$