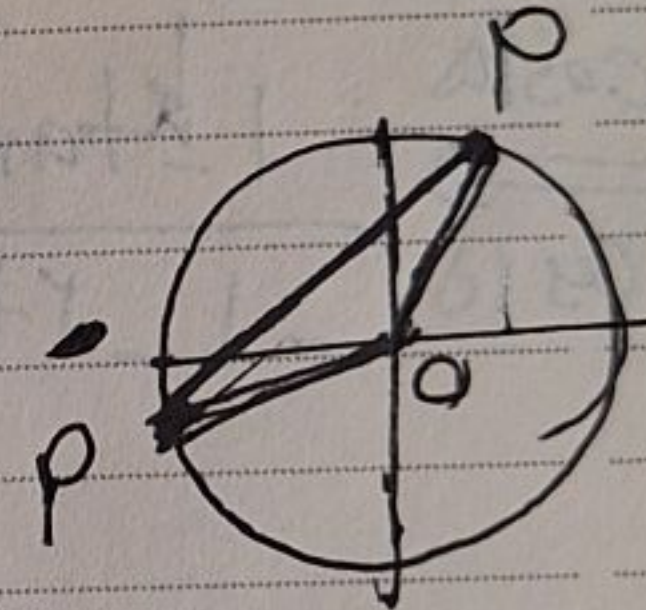
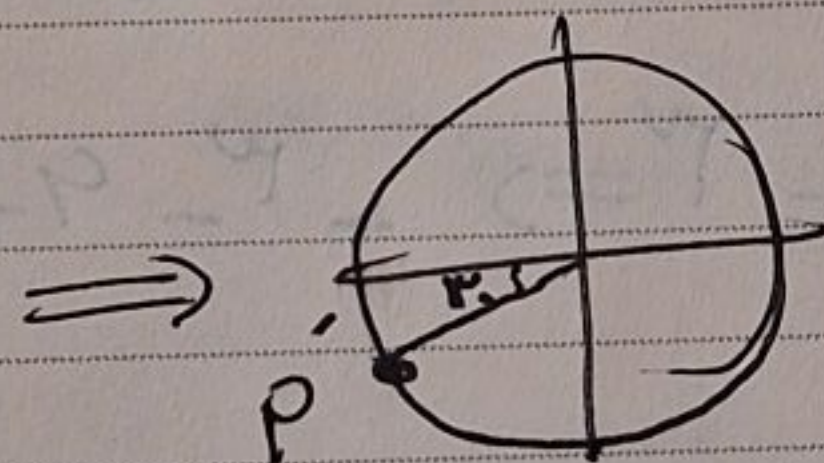
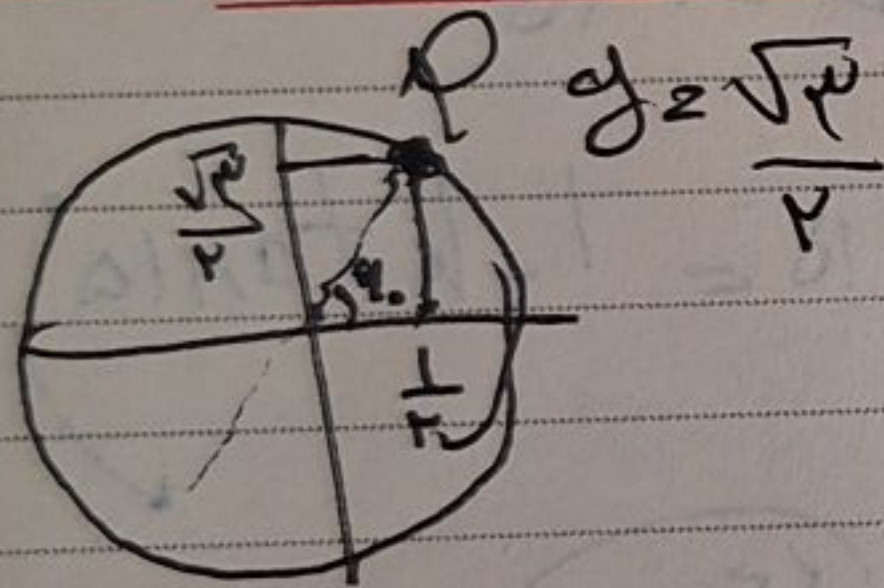


$$\frac{a \sin \frac{\pi}{3} + b \cos \frac{\pi}{4}}{a \sin \frac{\pi}{4} + b \cos \frac{\pi}{3}} = \tan \frac{\pi}{4}$$

$$\Rightarrow \frac{-\frac{\sqrt{3}}{2}a - \frac{\sqrt{3}}{2}b}{\frac{1}{2}a + \frac{1}{2}b} = -\frac{\sqrt{3}}{1} \Rightarrow \frac{\sqrt{3}(a+b)}{\frac{1}{2}(a-b)} = \frac{\sqrt{3}}{1}$$

$$\Rightarrow \frac{-(a+b)}{a-b} = \frac{1}{2} \Rightarrow -2a - 2b = a - b \Rightarrow 3a = -2b$$

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

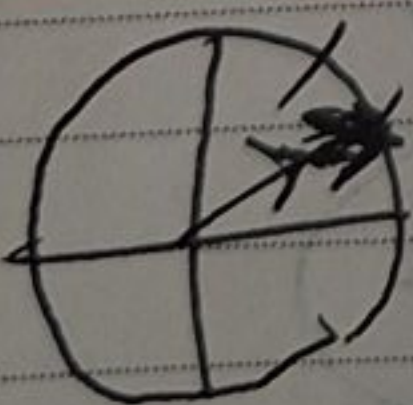


$$OP = \sqrt{\left(\frac{1}{2}\right)^2 + \left(\frac{\sqrt{3}}{2}\right)^2} = \frac{\sqrt{4}}{2}$$

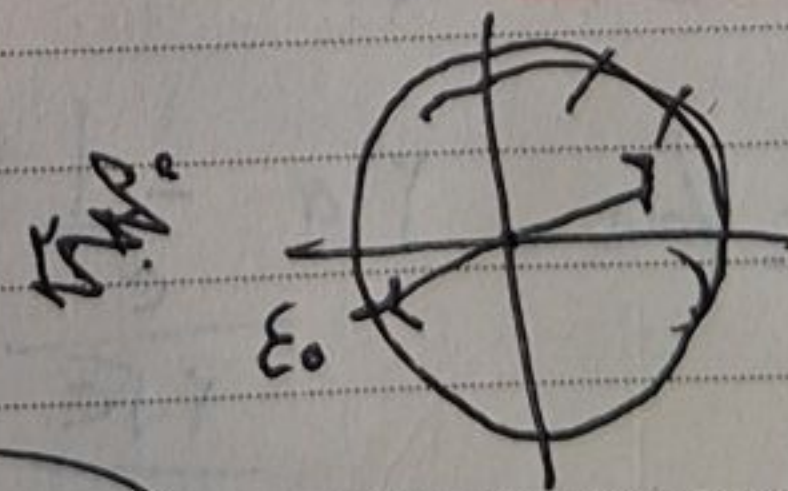
$$OP = \sqrt{\left(-\frac{1}{2}\right)^2 + \left(\frac{\sqrt{3}}{2}\right)^2} = \frac{\sqrt{4}}{2}$$

$$PP' = \sqrt{\left(\frac{1}{2} - \left(-\frac{1}{2}\right)\right)^2 + \left(\frac{\sqrt{3}}{2} - \frac{\sqrt{3}}{2}\right)^2} = \sqrt{\left(\frac{1+1}{2}\right)^2 + 0} = \sqrt{1} = 1$$

$$\Rightarrow k = \sqrt{4} \sqrt{2} \sqrt{2}$$

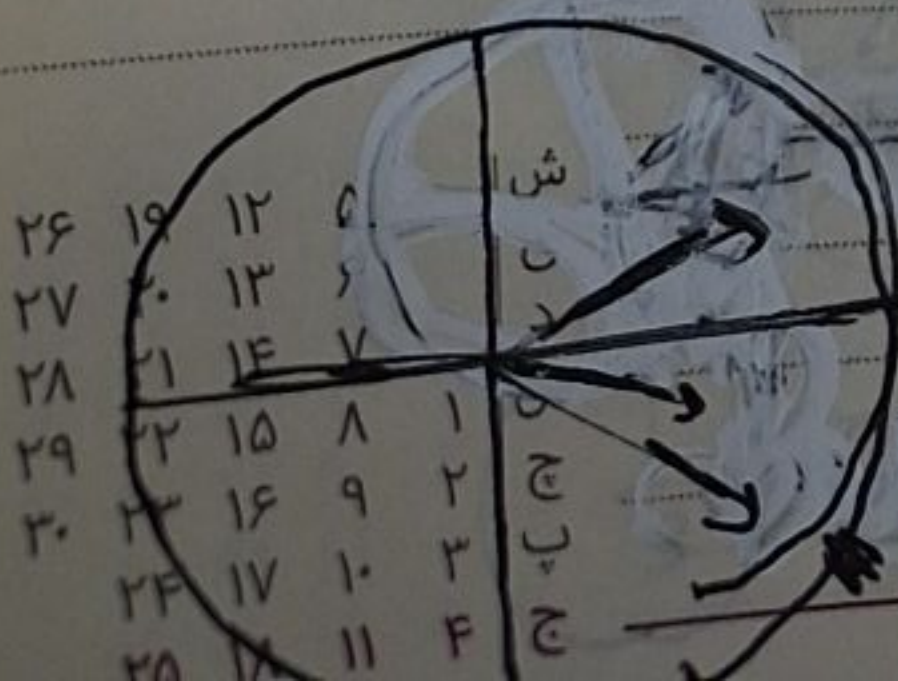


$$\frac{\pi}{6} \times \frac{18}{\pi} = 30^\circ \Rightarrow$$

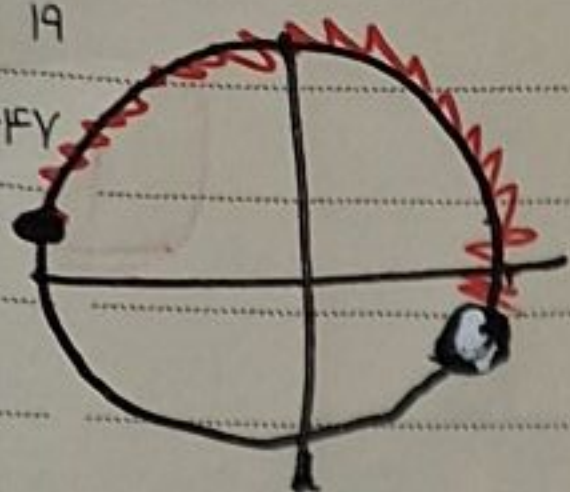


عقرباکی
معار

$$\frac{20^\circ}{40^\circ} = \frac{20^\circ}{20^\circ} \Rightarrow 2:40^\circ$$



در ساعت ۲:۲۰
کلیه قاصدین عقربا
ساعت و دقیقه شمار ۲۰:۲۰



$$\Rightarrow -1 \leq \sin \alpha \leq 1 \Rightarrow -1 \leq \frac{m-r}{r} \leq 1$$

5

$$\begin{aligned} \frac{m-r}{r} \leq 0 &\Rightarrow m-r \leq 0 \Rightarrow m \leq r \\ \frac{m-r}{r} > 0 &\Rightarrow m-r > 0 \Rightarrow m > r \end{aligned}$$

$$\frac{1}{c} \leq m \leq 1$$

4

$$\frac{\sin(10^\circ) + k \cos(100^\circ)}{\cos(140^\circ) + r \sin(110^\circ)} = \frac{\cos 10^\circ - k \sin 10^\circ}{-\cos 10^\circ + r \sin 10^\circ} = r$$

$$\frac{\cos 10^\circ}{\cos 10^\circ} \frac{1 + k \tan 10^\circ}{-1 - r \tan 10^\circ} = r \Rightarrow r - r \tan 10^\circ = 1 - k \tan 10^\circ$$

$$\frac{k}{r} = \frac{1}{\tan 10^\circ} \Rightarrow k = 1.44 \approx 1.5$$

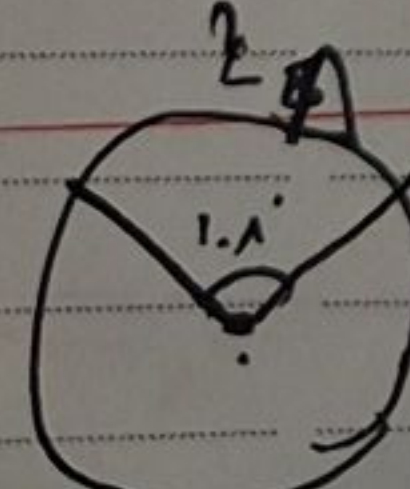
3

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

$$r + r \cos \alpha, 1 - \cos \alpha \Rightarrow \cos \alpha = -1 \Rightarrow \alpha = \pi \Rightarrow \sin \alpha = \frac{r\sqrt{2}}{r}$$

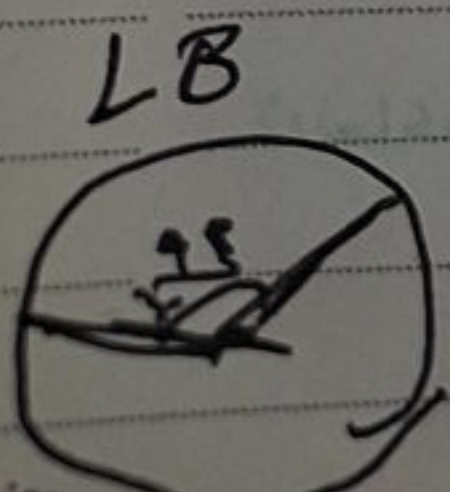
$$r \cot \alpha = r \alpha = \frac{1}{\frac{r\sqrt{2}}{r}} \Rightarrow \frac{r\alpha - 1}{r\sqrt{2}} = \frac{-1}{\sqrt{2}} \Rightarrow \alpha = \frac{-\sqrt{2}}{r}$$

2



$$L_B = \frac{1.1 \pi}{1.1} r_A = \frac{1}{1.1} \pi r_A$$

$$\frac{r_B}{r_D} = \frac{r}{c} \Rightarrow \frac{r_B}{r_D} = \frac{r}{c} \Rightarrow \frac{r_B}{r_D} = \frac{r}{c}$$



$$L_B = \frac{9.8}{r_0} r_B$$

$$\frac{r_B}{r_D} = \frac{r}{c} \Rightarrow \frac{r_B}{r_D} = \frac{r}{c} \Rightarrow \frac{r_B}{r_D} = \frac{r}{c}$$

M		6	13	20	27
T		7	14	21	28
W	1	8	15	22	29
T	2	9	16	23	30
F	3	10	17	24	31
S	4	11	18	25	
S	5	12	19	26	

