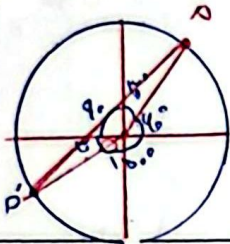


$$\frac{-\frac{\sqrt{3}}{2}a - \frac{\sqrt{3}}{2}b}{-\frac{1}{2}a + \frac{1}{2}b} = -\frac{\sqrt{3}}{2}$$

$$\frac{b}{a} = \frac{-\frac{\sqrt{3}}{2}a}{\frac{1}{2}a} = -\sqrt{3}$$

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

$$\cos \alpha \leq \frac{1}{2} \Rightarrow \alpha \leq 60^\circ$$



$$PP' = \sqrt{1+1-2\cos 120^\circ}$$

$$\sqrt{2+\sqrt{3}}$$

$$2 + \sqrt{2+\sqrt{3}}$$

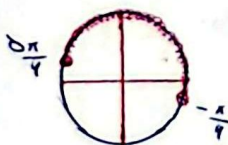
$$\frac{\pi}{4} \times \frac{180}{\pi} \leq 20^\circ$$

فاصله حرکت ساعت ۳ است و عقربه ساعت شمار ۴۰ دقیقه است
ساعت زمان طی شده به یک ساعت نمی رسد!!
از طرفی میزان حرکت عقربه ساعت شمار نصف دقیقه است مثلاً: اگر ۴۰ دقیقه بگذرد عقربه ساعت شمار ۳ حرکت می کند ۲۰ دقیقه از نیم است و ساعت ۲:۴۰ است

$$|\frac{11}{2} \text{ min} - 90| = 20$$

$$\frac{11}{2}x - 90 \leq 20 \Rightarrow 11x \leq 220 \Rightarrow x \leq 20 \rightarrow \text{دومین بار}$$

$$\frac{11}{2}x - 90 = -20 \Rightarrow 11x \leq 140 \Rightarrow x \leq 12.7 \rightarrow \text{اولین بار}$$



$$-\frac{1}{2} < \sin \alpha < 1$$

$$-\frac{1}{2} < \frac{m-2}{5} < 1$$

$$\frac{1}{2} < m < 7$$

$$\tan 18^\circ = \frac{1}{r} \Rightarrow \sin 18^\circ = \frac{1}{r}$$

$$\frac{\cos 18^\circ - k \sin 18^\circ}{-\cos 18^\circ - r \sin 18^\circ} = \frac{r - k}{-4} = r = -(r-k) = -1 \Rightarrow r = 1$$

$$\frac{G \tan \alpha + G \tan \alpha}{\tan \alpha - r \tan \alpha} = -r G \tan \alpha = -r \times \left(\frac{\sqrt{r}}{r} \right) = -\frac{1}{r}$$

$$1 - G \sin \alpha = r + r G \sin \alpha$$

$$G \sin \alpha = \frac{1}{r} \Rightarrow \sin \alpha = \frac{\sqrt{r}}{r}$$

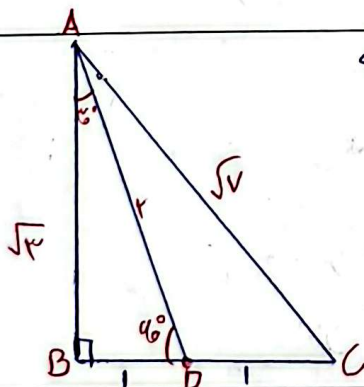


$$\Rightarrow G \tan \alpha = \frac{\sqrt{r}}{1} = \frac{\sqrt{r}}{r}$$

$$\frac{1}{r} \times \frac{\pi}{2} = \frac{r\pi}{2}$$

$$\frac{S_A}{S_B} = \left(\frac{r_A}{r_B} \right)^2 = \left(\frac{r}{r} \right)^2 = \frac{1}{r} = \frac{1}{r}$$

$$r_A \times \frac{1}{r} = r_B \times \frac{1}{r} \Rightarrow r_A = r_B$$



$$S_{ABC} = \frac{\sqrt{r} \times BC}{2} \Rightarrow BC = r \Rightarrow DC = 1$$

$$AC^2 = AB^2 + BC^2$$

$$AC^2 = r + r = 2r$$

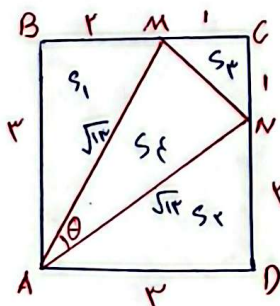
$$AC = \sqrt{2r}$$

$$\sin \hat{C} = \frac{AB}{AC} = \frac{\sqrt{r}}{\sqrt{2r}}$$

$$\cos \hat{C} = \frac{BC}{AC} = \frac{\sqrt{r}}{\sqrt{2r}}$$

$$\sin \hat{C} \times \sin \hat{C} = \frac{r}{2r}$$

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



$$\sqrt{r+1} = AM = AN$$

$$S = r \times r = r^2$$

$$S_1 = S_r = \frac{r \times r}{2} = \frac{r^2}{2}$$

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

$$S_f = S - (S_1 + S_r + S_r) = r^2 - 4 - \frac{1}{2} = \frac{d}{r}$$

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

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