

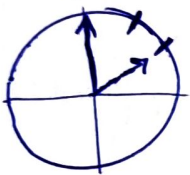
میتانیم - ۱۲ و ۱۳

$$\frac{a \sin 15^\circ + b \cos 15^\circ}{a \sin 45^\circ + b \cos 45^\circ} = \tan 15^\circ \quad \frac{a \times \frac{\sqrt{3}}{2} + b \times -\frac{1}{2}}{a \times -\frac{1}{2} + b \times \frac{1}{2}} = \left(-\frac{\sqrt{3}}{1} \right) \quad (1)$$

$$\frac{r a}{r} + \frac{r b}{r} = \frac{b}{r} - \frac{a}{r} \quad \frac{r a}{r} = -\frac{r b}{r} \quad b = -r a \quad \boxed{\frac{b}{a} = -r}$$

دقیقه شمار ساعت شمار

$\frac{11}{3}$	2π
$\frac{11}{9}$	α



اشارا

ساعت اول = $2^{\circ}00'$

$$\alpha = \frac{2\pi}{3} \rightarrow 120^{\circ}$$

جورفتن دقیقه شمار



مستطیل

اگر عقربه ساعت شمار $\frac{11}{3}$ به طرف دقیقه شمار 2π بچرخد

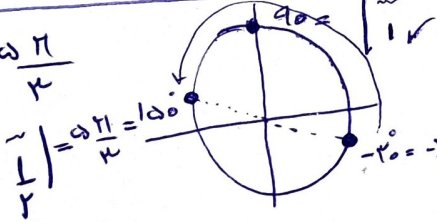
$\frac{11}{3}$	110
$\frac{11}{9}$	α

$$= \alpha = 20^{\circ}$$

جورفتن ساعت شمار

$$\text{ساعت چرخ} = 2^{\circ}10'$$

$$-\frac{\pi}{9} < \alpha \leq \frac{\omega \pi}{\pi}$$



$$-\frac{1}{r} < \sin \alpha \leq 1$$

$$-\frac{1}{r} < \frac{m - \pi}{\omega} \leq 1 \rightarrow \frac{1}{r} < m \leq 1$$

$$\frac{\sin(90^{\circ} + \omega) + k(\cos(270^{\circ} - \omega))}{\cos(180^{\circ} - \omega) + r \sin(180^{\circ} + \omega)} = r$$

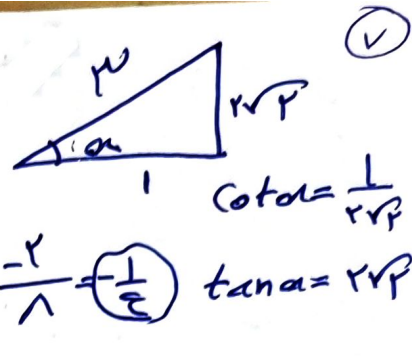
$$\frac{\cos \omega - k \sin \omega}{-\cos \omega - r \sin \omega} = r \div \cos \omega$$

$$\frac{1 - 0/r \omega k}{-1 - 0/\omega} = r$$

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

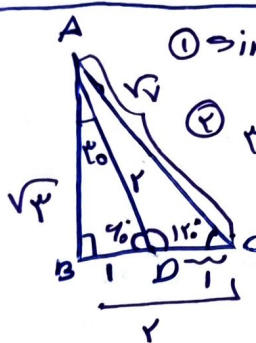
$$1 - \frac{k}{r} = -r - \frac{r}{r} \quad k = rr$$

$$\frac{1 - \cos \alpha}{1 + \cos \alpha} = r \quad 1 - \cos \alpha = r + r \cos \alpha \quad \cos \alpha = -\frac{1}{r}$$



جبر از معادله عبارتی از روی دایره منطبق

$$\frac{\cot \alpha + \cot \alpha}{\tan \alpha - r \tan \alpha} \rightarrow \frac{r \cot \alpha}{- \tan \alpha} = \frac{\frac{r}{r \sqrt{r}}}{-\frac{1}{r \sqrt{r}}} = \frac{-r}{1} = \left(-\frac{1}{\epsilon}\right) \tan \alpha = r \sqrt{r}$$



(1) $\sin 30 = \frac{1}{AD} = \frac{1}{r} \quad AB = r$

(2) $30 + 90 = 120 \quad 110 - 120 = -10$

(3) $110 - 40 = 70$

(4) $r + AB^2 = r^2 \quad AB = \sqrt{r}$

(5) $r^2 + \sqrt{r}^2 = AC^2 \quad AC = \sqrt{r}$

(9) $S = \frac{\text{ارتفاع} \times \text{مقدار}}{r} \rightarrow \frac{BC \times \sqrt{r}}{r} = \sqrt{r}$

$BC = r$

$$\sin 30 = r \sin 30 \cos 30 \rightarrow r \times \frac{\sqrt{r}}{\sqrt{r}} \times \frac{1}{\sqrt{r}} \rightarrow \frac{\epsilon \sqrt{r}}{\sqrt{r}}$$

(1) $\alpha = \frac{L}{r} \quad 101^\circ = 9^\circ \text{ ریزش} \rightarrow \frac{\pi}{180} \times \frac{110}{101} \quad \alpha = \frac{101\pi}{110} \quad LA = \frac{101\pi}{110} \times r_A$

$LB = \frac{9\pi}{10} \times r_B \quad LB = LA \rightarrow \frac{9\pi}{10} \times r_B = \frac{101\pi}{110} \times r_A \quad r_B = \frac{101}{110} r_A$

$\frac{\epsilon}{4} = \frac{r}{r}$

$$\frac{SA}{SB} = \frac{r_A^2}{r_B^2} \Rightarrow \frac{r_A^2}{\frac{\epsilon}{4} r_A^2} = \boxed{\frac{4}{\epsilon}}$$

(2) $\alpha = |\omega_1 M - \omega_2 H| \quad -\omega_1 M + 90 = \omega_2 \quad \omega_1 M = \omega_2 \quad \mu = 1, \sqrt{r}$

زاویه بین ساعت
و دقیقه

مس از گذشت $1, \sqrt{r}$ دقیقه