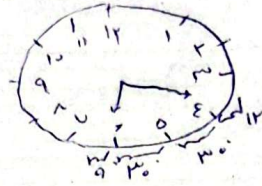


الف $\rightarrow 153^\circ$
 $15^\circ + 30^\circ + 30^\circ + 30^\circ + 28^\circ = 153^\circ$

ب $\rightarrow$
 $a = |10/5m - 30h| = 153^\circ$
 $30/20 - 30^\circ$



الف $\rightarrow$

۲
 $a = |10/5m - 30h| = 11^\circ$

الف $\rightarrow$
 $R^2 \frac{a}{r} = q \times \frac{\pi}{4\epsilon} = \frac{3\pi}{\epsilon}$

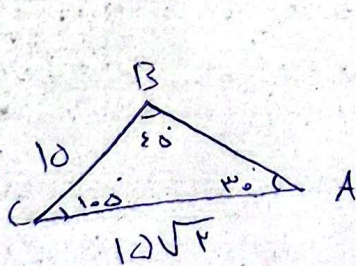
۳
 $Ra = \frac{\pi}{r}$

ب $\rightarrow$

الف $\rightarrow$
 $\Delta \times \frac{1}{r} \times \frac{\sqrt{3}}{r} = 10\sqrt{3}$

ب $\rightarrow$
 $C = \sqrt{a^2 + b^2 - 2ab \cos \alpha} = \sqrt{64 + 25 - (10 \times \frac{1}{r})} = \sqrt{49}$
 $C = 7$

محیط = $V + 1 + \Delta = 20$



$\frac{\sin A}{10} = \frac{\sin B}{10\sqrt{2}}$

$\hat{B} = 45^\circ$
 $\hat{A} = 30^\circ$
 $\hat{C} = 105^\circ$

$$\frac{-\cancel{\tan \alpha} + r \tan \alpha}{-\cancel{\tan \alpha} - \tan \alpha} = \frac{r \tan \alpha}{- \tan \alpha} = -1$$

$$\frac{\pi}{r} = 12^\circ$$

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

$$\frac{r(\sin^2 \alpha + \cos^2 \alpha)}{\sin^2 \alpha + r \cos^2 \alpha + r \sin^2 \alpha + r \cos^2 \alpha} = \frac{r}{\sin^2 \alpha + \cos^2 \alpha} = r$$

$$r \sin^2 \alpha + r \cos^2 \alpha = r \sin^2 \alpha + r \cos^2 \alpha$$

$$\sin^2 \alpha = \cos^2 \alpha \quad (\tan \alpha = 1)$$

$$\frac{r(\sin^2 \alpha + \cos^2 \alpha)}{\sin^2 \alpha + \cos^2 \alpha} = r$$

$$\frac{\sin^2 \alpha - r \cos^2 \alpha + 1}{\sin^2 \alpha + \cos^2 \alpha + \cos^2 \alpha - r} = \frac{2}{1}$$

$$\sin^2 \alpha - r \cos^2 \alpha + 1 = 2 \cos^2 \alpha$$

$$r \sin^2 \alpha + \cos^2 \alpha = r \cos^2 \alpha$$

$$\sin^2 \alpha = \frac{r}{1} \cos^2 \alpha$$

$$\tan^2 \alpha = \frac{r}{1}$$

$$\cos^2 \alpha = \frac{1 + \cos 2\alpha}{2}$$

$$\cos^2 \frac{\pi}{4} = \frac{1 + \cos \frac{\pi}{2}}{2} = \frac{1 + 0}{2} = \frac{1}{2}$$

$$\cos \frac{\pi}{4} = \frac{\sqrt{2}}{2}$$

$$\sin^2 \alpha = \frac{1 - \cos 2\alpha}{2}$$

$$\sin^2 \frac{\pi}{4} = \frac{1 - \cos \frac{\pi}{2}}{2} = \frac{1 - 0}{2} = \frac{1}{2}$$

$$\sin \frac{\pi}{4} = \frac{\sqrt{2}}{2}$$

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