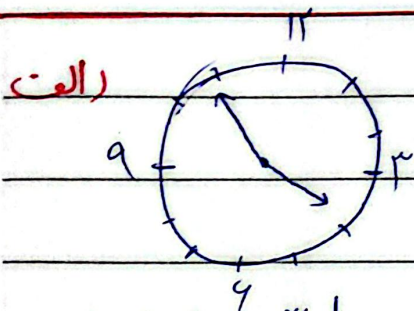


بکار رفتی

بنام پروردگار نور و علم

هم زحمت نصیب



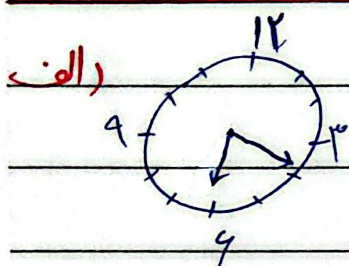
$$(6 \times 60^\circ) + 6^\circ \times 90^\circ = 150^\circ$$

-1

ب

$$5, \Delta m - 3.0h \Rightarrow \pi = \left| \frac{5 \times 60^\circ}{120^\circ} - \frac{3.0 \times 90^\circ}{90^\circ} \right| = 20^\circ$$

$$30^\circ - 20^\circ = 10^\circ$$



$$\frac{6 \times 30^\circ}{90^\circ} + \frac{6 \times 60^\circ}{120^\circ} + \frac{1 \times 90^\circ}{90^\circ} = 11^\circ$$

-2

ب

$$\pi = |5, \Delta m_{\min} - 3.0h| \Rightarrow \pi = \left| \frac{5 \times 60^\circ}{99^\circ} - \frac{3.0 \times 90^\circ}{120^\circ} \right| = 11^\circ$$

الف

$$S = \frac{1}{2} \alpha R^2 \Rightarrow \frac{\pi}{2} \times (12)^2 = \frac{9 \times \pi}{2} \Rightarrow \pi = 3\pi$$

-3

ب

$$P = 3 + 3 + 12 \times \frac{9 \times \pi}{2} = \frac{9 \times \pi}{2}$$

الف

$$S = \frac{1}{2} AC \times AB \times \sin \hat{A} = \frac{1}{2} \times 10 \times 10 \times \frac{\sqrt{3}}{2} = 10\sqrt{3}$$

-4

ب

$$BC = \sqrt{(12)^2 + (6)^2 - 2 \times 12 \times 6 \times \cos 50^\circ} = V$$

$$P = 10 + 10 + V = 20$$

$$\hat{A} = 110^\circ - 10^\circ = 100^\circ$$

$$\frac{BC}{\sin 100^\circ} = \frac{BA}{\sin \hat{B}} \Rightarrow \frac{10}{\sin 100^\circ} = \frac{10\sqrt{2}}{\sin \hat{B}}$$

-5

$$\sin \hat{B} = \frac{\sqrt{2}}{2} \Rightarrow \hat{B} = 45^\circ$$

$$\left. \begin{aligned} C &= 110^\circ - (100^\circ + 45^\circ) = 10^\circ \\ B &= 45^\circ = \frac{\pi}{4} \\ C &= 10^\circ = \frac{5\pi}{18} \end{aligned} \right\}$$

زیاده

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

-9

$$\tan \frac{\pi}{r} = a \quad \frac{\pi}{r} = \frac{D}{180} \Rightarrow D = \frac{180}{r} = 18^\circ, \quad \tan(\pi - 18^\circ) + \tan(\pi + 18^\circ) = -1$$

$$\frac{r \cot 18^\circ - \cot 18^\circ}{-r \tan 18^\circ - \cot 18^\circ} = \frac{r-1}{-r-1} = -1$$

$$r \tan(\pi - 18^\circ) - \tan(\frac{r\pi}{r} - 18^\circ)$$

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

-1

$$r \sin^2 \pi - r \cos^2 \pi = r \sin^2 \pi + \cos^2 \pi \rightarrow \sin^2 \pi = \cos^2 \pi \quad (\tan^2 \pi = 1)$$

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

-9

$$r \tan^2 \pi - 1 = r \rightarrow \tan^2 \pi = \frac{1}{r} \Rightarrow \tan \pi = \frac{1}{\sqrt{r}}$$

$$\text{الف) } \cos^2 \frac{\pi}{r} = \frac{1 + \cos^2 \pi}{2} = \frac{1 + \frac{1}{r}}{2} \rightarrow \cos^2 \frac{\pi}{r} = \frac{r+1}{2r}$$

-10

$$\text{ب) } \sin^2 \frac{\pi}{r} = \frac{1 - \cos^2 \pi}{2} = \frac{1 - \frac{1}{r}}{2} \rightarrow \sin^2 \frac{\pi}{r} = \frac{r-1}{2r}$$