

مساحت دایره ۱
در $\cos n$ ضرب
کنیم

$$\frac{\frac{\sin n}{\cos n} + \frac{\cos n}{\cos n}}{\frac{\sin n}{\cos n} + \frac{\cos n}{\cos n}} + \frac{\frac{\sin n}{\cos n} - \frac{\cos n}{\cos n}}{\frac{\sin n}{\cos n} + \frac{\cos n}{\cos n}} = r$$

$$\frac{\tan n + 1}{\tan n - 1} + \frac{\tan n - 1}{\tan n + 1} = r \Rightarrow \frac{\tan^2 n + 1 + r \tan n + \tan^2 n + 1}{\tan^2 n - 1} = r$$

$$\Rightarrow \frac{r \tan^2 n + r}{\tan^2 n - 1} = r \Rightarrow r \tan^2 n + r = r \tan^2 n - r$$

$$\boxed{\tan^2 n = 0} \quad \checkmark$$

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

$$\Rightarrow r \tan^2 n - 1 = r \Rightarrow \boxed{\tan^2 n = \frac{0}{r}} \quad \checkmark$$

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

$$\text{الف) } \cos^2 \alpha = \frac{1 - \sin^2 \alpha}{r} \Rightarrow \cos^2 (45^\circ) = \frac{1 + \frac{\sqrt{r}}{r}}{r} = \frac{1}{r} + \frac{\sqrt{r}}{r} = \frac{r + \sqrt{r}}{r}$$

$$\cos (45^\circ) = \frac{1}{r} \sqrt{r + \sqrt{r}} \quad \checkmark$$

$$\text{ب) } \sin (45^\circ) \Rightarrow$$

$$\sin (45^\circ) = \cos (45^\circ) = \frac{\sqrt{r + \sqrt{r}}}{r} \quad \checkmark$$

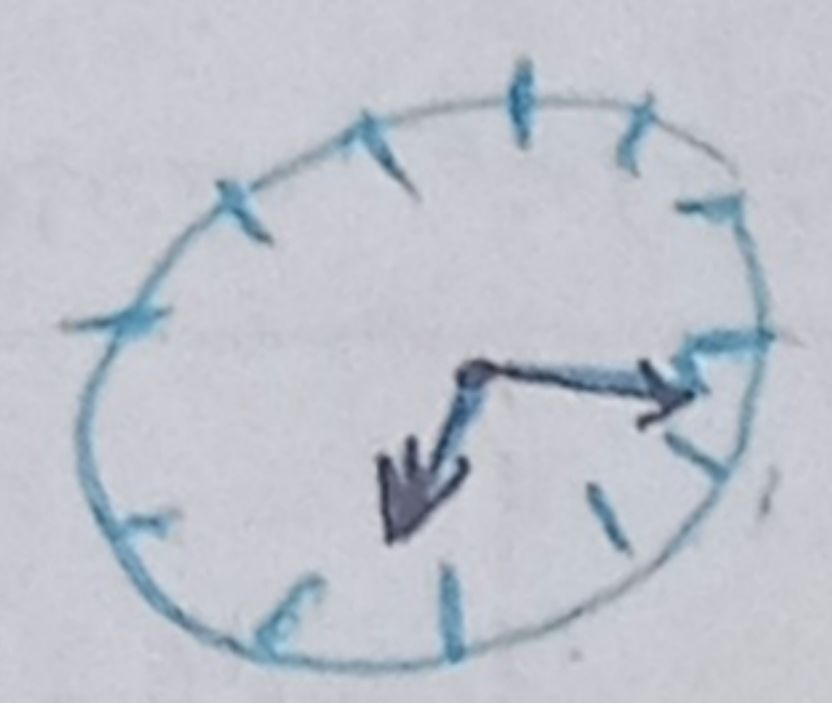
(ب) $\frac{\Delta F}{r} + r \times \omega^0 + r \times \gamma = 0$ (اف) $15 \times 10^3 + 4 \times 30^0 + 1 \times 4 = 15300$

$|15/10 m - 30 H| = |15/10 \times 10^3 - 30 \times 30| = 1500$

$30^0 - 1500 = 1530^0$ ✓



(۲)



$40 + 9 + 112 = 171^0$ ✓

(الف)

۲

$r \times \gamma = 112$
 $r \times \omega^0 = 40$
 $\frac{1}{r} = 9$

$|15/10 \times 112 - 4 \times 30| = 110 - 120 = 10^0$ ✓ (ب)

(۲)

$\frac{\alpha r^2}{r} = \frac{\pi}{4 \times 112} \times r^2 = \frac{r}{r} \pi$ ✓

(اف)

۳

$\hat{AB} = \alpha r = \frac{\pi}{4} \times r = \frac{\pi}{r}$

(ب)

(۲)

$P = r + r + \frac{\pi}{r} = 4 + \frac{\pi}{r}$ ✓

$S = \frac{1}{r} AB \times AC \times \sin \alpha = \frac{1}{r} \times 10 \times 112 \times \frac{\sqrt{r}}{r} = 10\sqrt{r}$ ✓

(اف)

۴

$BC = \sqrt{10^2 + 112^2 - 2 \times 10 \times 112 \times \frac{1}{r} \times 10} = 10$ ✓

$P = 10 + 112 + 10 = 132$ ✓

(ب)

(۲)

پیش از این:

$BC = \sqrt{AC^2 + AB^2 - 2AB \cos \alpha}$

$\hat{A} = 110^0 - (\hat{B} + \hat{C}) = 110 - 120 = 10^0$

$\frac{\sin A}{BC} = \frac{\sin B}{AC} = \frac{\sin C}{AB}$

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$\frac{1}{10} = \frac{\sin B}{10\sqrt{r}} \Rightarrow$

$\sin B = \frac{\sqrt{r}}{r} \Rightarrow \hat{B} = \frac{\pi}{r}$ ✓

$\hat{C} = \frac{10}{110} = \frac{1}{11} \pi$ ✓

(۲)

$\tan(\pi - \alpha) = -\tan \alpha$

$\tan(\pi - \alpha) = -\tan \alpha$

$\tan(\pi + \alpha) = \tan \alpha$

$\tan(\pi + \alpha) = \tan \alpha$

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

(۲)

$A = \frac{r \tan(90 - 10^0) + \tan(90 + 10^0)}{r \tan(110 - 10^0) - \tan(r \times 10^0 - 10^0)} = \frac{r \times \frac{1}{a} - 1 \times \frac{1}{a}}{-ra - \frac{1}{a}} = \frac{\frac{1}{a}}{-ra - \frac{1}{a}} = \frac{-1}{ra^2 + 1}$ ✓

(۲)