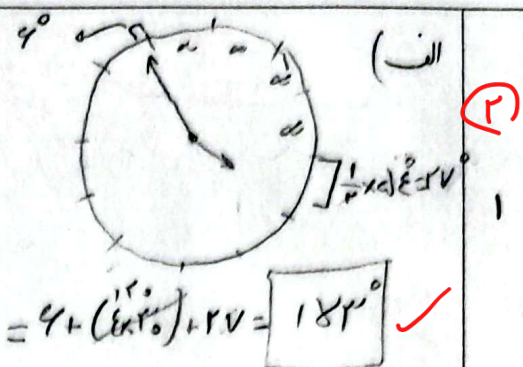


۲۰ افزید:

$$|8.8m - 30h|$$

$$\left| \frac{11}{r} \times 27 - 90 \right| = |29V - 90|$$

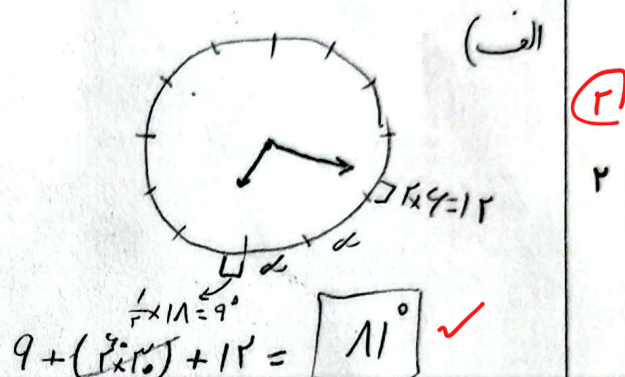
$$= 20V \rightarrow 340 - 20V = 180^\circ \checkmark$$



$$|8.8m - 30h|$$

$$\left| \frac{11}{r} \times 11 - 540 \right| = |99 - 540|$$

$$= 441 \rightarrow 441 - 330 = 111^\circ \checkmark$$



(الف) $\vec{r} \times \vec{\alpha} \rightarrow \frac{R \times \alpha}{r} = \frac{\pi}{4} \times \frac{1}{r} \times 9 = \frac{3\pi}{4} \text{ cm} \checkmark$

(ب) $\vec{r} \times \vec{P} \rightarrow R\alpha = \frac{\pi}{4} \times 3 = \frac{\pi}{r} \text{ cm} \rightarrow \frac{\pi}{r} + 4 \text{ cm} = \frac{11 + \pi}{r} \text{ cm} \checkmark$

(الف) $\vec{r} \times \vec{A} = \frac{1 \times 2 \times \sin 60^\circ}{r} = \frac{2 \times 2 \times \frac{\sqrt{3}}{2}}{r} = 10\sqrt{3} \checkmark$

(ب) $\overline{CB} = \sqrt{48 + 12 - 2 \times 2 \times \cos 60^\circ} = \sqrt{49} = 7 \checkmark$

$\rightarrow r_{PABE} = 2 + 1 + 7 = 10 \checkmark$

$\hat{A} = 60^\circ \rightarrow \sin 60^\circ = \frac{1}{2}$

$\frac{18}{\sin 60^\circ} = \frac{18\sqrt{r}}{\sin B} \rightarrow \frac{18\sqrt{r}}{r} = 18 \times \sin B \rightarrow \sin B = \frac{\sqrt{r}}{r}$

$\hat{B} = \frac{\pi}{6} \rightarrow C = \frac{\pi}{4} - \frac{\pi}{6} = \frac{\pi}{12} \rightarrow \frac{\sqrt{\pi}}{12} \checkmark$

$\hat{B} = \frac{\pi}{6} \checkmark$

$$\frac{\tan(\pi - \alpha) + r \tan(\pi + \alpha)}{\tan(r\pi - \alpha) - \tan(r\pi + \alpha)} = \frac{-\tan \alpha + r(\tan \alpha)}{-\tan \alpha - \tan \alpha} = \frac{r \tan \alpha}{-2 \tan \alpha} = \boxed{-\frac{r}{2}}$$

(r)
6

$$\frac{\frac{\pi}{1r} \times \frac{1}{\pi} = 1^\circ}{\frac{r \tan 1^\circ + \tan 10^\circ}{r \tan 1^\circ - \tan 10^\circ}} = \frac{r \tan(\frac{\pi}{r} - 1^\circ) + \tan(\frac{\pi}{r} + 1^\circ)}{r \tan(\frac{\pi}{r} - 1^\circ) - \tan(\frac{\pi}{r} + 1^\circ)}$$

$$= \frac{r \cot 1^\circ + (-\cot 1^\circ)}{r(-\cot 1^\circ) - (\cot 1^\circ)} = \frac{\cot 1^\circ}{-r \cot 1^\circ - \cot 1^\circ} = \frac{\frac{1}{a}}{-ra - \frac{1}{a}} =$$

$$= \frac{\frac{1}{a}}{-ra - \frac{1}{a}} = \boxed{-\frac{1}{ra^2 + 1}}$$

(r)
7

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

(r)
8

$$\frac{r}{-\cos^r n} = r \rightarrow -r \cos^r n = r \rightarrow \cos^r n = -\frac{r}{r}$$

$$\tan^r n = \frac{1 - \cos^r n}{1 + \cos^r n} = \frac{1 + \frac{r}{r}}{1 - \frac{r}{r}} = \frac{\frac{2}{r}}{\frac{0}{r}} = \boxed{\Delta}$$

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

(r)
9

$$= \frac{-r \cos^r n + 1 - \cos^r n}{1 + \cos^r n} = \frac{-r \cos^r n + 1}{1 + \cos^r n} = \epsilon \rightarrow \epsilon + \epsilon \cos^r n = -r \cos^r n + 1$$

$$\sqrt{\cos^r n} = -r \rightarrow \cos^r n = -\frac{r}{r}$$

$$\tan^r n = \frac{1 - \cos^r n}{1 + \cos^r n} = \frac{1 + \frac{r}{r}}{1 - \frac{r}{r}} = \frac{\frac{2}{r}}{\frac{0}{r}} = \boxed{\frac{r}{1}}$$

(r)
10

$$\text{ii) } (\cos(r\pi/8))^r = \frac{1 + \cos \pi/8}{r} = \frac{1 + \frac{\sqrt{r}}{r}}{r} = \frac{r + \sqrt{r}}{r}$$

$$\rightarrow \boxed{\cos(r\pi/8) = \frac{\sqrt{r + \sqrt{r}}}{r}}$$

$$\text{iii) } (\sin(r\pi/8))^r = \frac{1 - \cos \pi/8}{r} = \frac{1 - \frac{\sqrt{r}}{r}}{r} = \frac{r - \sqrt{r}}{r}$$

$$\rightarrow \boxed{\sin(r\pi/8) = \frac{\sqrt{r - \sqrt{r}}}{r}}$$