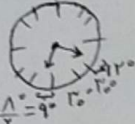


الف)  $\rightarrow 30^\circ + 30^\circ + 30^\circ + 30^\circ + 27^\circ + 6^\circ = 153^\circ$

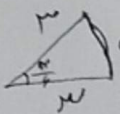
ب) $\alpha = |\omega/\omega_m - r_0 h| = |\omega/\omega \times \Delta t - r_0 \times r| = |29V - 90| = |20V| = 20V^\circ$
~~20V~~ $390 - 20V = 153^\circ$

الف)  $\rightarrow 30^\circ + 30^\circ + 12^\circ + 9^\circ = 81^\circ$

ب) $\alpha = |\omega/\omega_m - r_0 h| = |\omega/\omega \times 11 - r_0 \times 9| = |99 - 110| = |-11| = 11^\circ$

الف) $S = \frac{\alpha}{r} \times R^2 = \frac{30}{r} \times r^2 = 12 \times 9 = 108$

$\frac{\pi}{6} = 30^\circ$

ب)  $\rightarrow 3 + 3 + 0/\omega \pi = 6 + 0/\omega \pi = \frac{12\pi}{r}$

مساحت دایره $6 \times \pi = 6\pi$

$\frac{6\pi}{12} = 0/\omega \pi$

الف) $S = \frac{1}{2} ab \sin \alpha = \frac{1}{2} \times \omega \times \omega \times \sin 60^\circ = \omega \times \omega \times \frac{\sqrt{3}}{2} = 10\sqrt{3}$
 $\sin 60^\circ = \frac{\sqrt{3}}{2}$

ب) $C = \sqrt{a^2 + b^2 - 2ab \cos \alpha} = \sqrt{\omega^2 + 9 - 2 \times \omega \times 3 \times \frac{1}{2}} = \sqrt{19 - 9} = \sqrt{10} = \pm \sqrt{10}$

$\cos 60^\circ = \frac{1}{2}$

مساحت $= \omega + 1 + V = 20$

چون طول نمی تواند
منفی باشد $\Rightarrow C = +V$

$a \cos B + b \cos A = c \Rightarrow 12 \times \cos C + 6 \times \frac{\sqrt{3}}{2} = 12\sqrt{3}$

6

$$\tan \frac{\pi}{r} = a \Rightarrow \tan \omega^\circ = a$$

$$\tan \omega^\circ = \frac{1}{\frac{r}{\sqrt{r^2-1}}}$$

$$\tan \omega^\circ = \frac{r}{\sqrt{r^2-1}} = \frac{r}{1 - \frac{1}{r}}$$

$$\frac{r}{r+\sqrt{r^2-1}} + \frac{r}{r-\sqrt{r^2-1}}$$

7

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

$$\Rightarrow r(\sin^2 x + \cos^2 x) = r \sin^2 x - r \cos^2 x \Rightarrow r \sin^2 x - r \sin^2 x = -r \cos^2 x - r \cos^2 x \Rightarrow -\sin^2 x = -2 \cos^2 x$$

$$\Rightarrow \tan^2 x = \frac{\sin^2 x}{\cos^2 x} = \boxed{\omega}$$

$$\Rightarrow \frac{\sin^2 x}{\cos^2 x} = \omega$$

8

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

$$\Rightarrow r \sin^2 x = 2 \cos^2 x \Rightarrow \frac{\sin^2 x}{\cos^2 x} = \frac{2}{r} = \omega = \tan^2 x$$

9

$$\text{a)} \cos(r/r \omega^\circ) \Rightarrow \cos \omega^\circ = \cos^2 r/r \omega^\circ - 1 + \cos^2 r/r \omega^\circ \Rightarrow \frac{\sqrt{r^2+1}}{r} = r \cos^2 r/r \omega^\circ$$

$$\Rightarrow \cos^2 r/r \omega^\circ = \frac{\sqrt{r^2+1}}{r}$$

$$\text{b)} \sin(r/r \omega^\circ) \Rightarrow \frac{\sqrt{r^2-1}}{r} = 1 - \sin^2 x - \sin^2 x \Rightarrow \frac{\sqrt{r^2-1}}{r} = -r \sin^2 x$$

$$\Rightarrow \frac{r - \sqrt{r^2-1}}{r} = \sin^2 x$$

10