

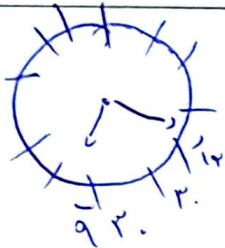
$$۱۲۰ + ۲۷ + ۶ = ۱۵۳^{\circ}$$

(الف)

$$\alpha = |\omega/\omega_m - ۳.h| = |\omega/\omega \times ۴ - ۹.۱| = ۲۰۷$$

$$۳۶ - ۲۷ = ۱۵۳$$

(ب)



$$۳ \rightarrow ۲۵ + ۱۲, ۹ = ۱۱^{\circ}$$

(الف)

$$|\omega/\omega_m - ۳.h| = |۹۹ - ۱۸.۱| = ۱۱^{\circ}$$

(ب)

$$S = \frac{\alpha}{r} \times R^2 = \frac{\pi}{T_r} \times ۹ = \left(\frac{۳\pi}{r} \right)$$

(الف)

$$\widehat{AB} : R\alpha = ۳ \frac{\pi}{4} = \frac{\pi}{r}$$

(ب)

$$P = ۳, ۳ + \frac{\pi}{r} = \left(۴ + \frac{\pi}{r} \right)$$

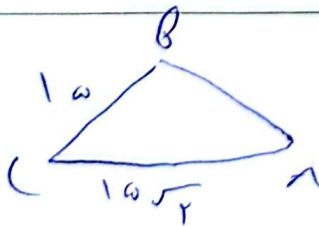
$$S = \frac{1}{r} AB \sin \alpha = \frac{1}{r} \times ۸ \times \omega \times \frac{\sqrt{r}}{r} = \left(۱۰\sqrt{۳} \right)$$

(الف)

$$C^2 = a^2 + b^2 - 2ab \cos \alpha \Rightarrow C^2 = ۲۵ + ۴۴ - ۲۰ \times \frac{1}{r} \times ۲ = ۱۹ - ۴ = ۱۵$$

$$\Rightarrow C = \sqrt{۱۵} \Rightarrow P = ۸ + \omega + \sqrt{۱۵} = \left(۲۵ \right)$$

(ب)



$$\widehat{B} + \widehat{C} = ۱۸۰$$

$$A(=۱۵\sqrt{۲})$$

$$B(=۱۰)$$

$$\widehat{A} = ۱۸۰ - ۱۵ - ۳۵$$

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C} \Rightarrow \frac{10}{\sin ۱۱۰} = \frac{10\sqrt{۲}}{\sin B} \Rightarrow \frac{10}{\sin ۱۱۰} = \frac{10\sqrt{۲}}{\sin B} \Rightarrow \frac{1}{\sin ۱۱۰} = \frac{\sqrt{۲}}{\sin B}$$

$$\Rightarrow \sin B = \frac{10\sqrt{۲}}{10} = \frac{\sqrt{۲}}{1} \Rightarrow B = ۴۵^{\circ} \Rightarrow C = ۱۸۰^{\circ}$$

$$\frac{Rad}{2\pi} = \frac{D}{1n.} \Rightarrow \widehat{B} = \frac{۴\omega}{1n.} = \frac{Rad}{\frac{۲\pi}{1}} \Rightarrow \widehat{B} = \frac{\pi}{r}$$

$$\frac{Rad}{\pi} = \frac{D}{1n.} \Rightarrow \frac{1. \omega}{1n.} = \frac{Rad}{\pi} \Rightarrow Rad = \frac{\sqrt{2}\pi}{1r} = \left(\frac{\sqrt{2}\pi}{1r} \right)$$

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

$$\begin{aligned} \tan \frac{\pi}{r} = \alpha &\Rightarrow \tan \omega = \alpha \quad A = \frac{r \tan \omega + \tan \omega}{r \tan \omega - \tan \omega} = \frac{r \tan(\frac{\pi}{r} - \omega) + \tan(\frac{\pi}{r} + \omega)}{r \tan(\frac{\pi}{r} - \omega) - \tan(\frac{\pi}{r} + \omega)} \\ &= \frac{r \cot \omega - \cot \omega}{-r \cot \omega - \cot \omega} = \frac{r + 1}{-r - 1} = -1 \end{aligned}$$

$$\begin{aligned} \frac{\sin x + c \cdot s x}{\sin x - c \cdot s x} + \frac{\sin x - c \cdot s x}{\sin x + c \cdot s x} = r &\Rightarrow \frac{(\sin x + c \cdot s x)^2 + (\sin x - c \cdot s x)^2}{\sin^2 x - c^2 s^2 x} = r \\ \Rightarrow \frac{r}{\sin^2 x - c^2 s^2 x} = r &\Rightarrow \sin^2 x - c^2 s^2 x = \frac{r}{r} = 1 \\ \sin^2 x + c \cdot s^2 x = 1 &\Rightarrow c \cdot s^2 x = \frac{1}{r} \quad \tan^2 x = \frac{\sin^2 x}{c \cdot s^2 x} = \frac{r}{1} = r \end{aligned}$$

$$\begin{aligned} \frac{\sin^2 x - r(c \cdot s^2 x + 1)}{\sin^2 x + r(c \cdot s^2 x - 1)} &= \frac{r - r \cdot c \cdot s^2 x}{1 - c \cdot s^2 x + r \cdot c \cdot s^2 x - 1} = \frac{r - r \cdot c \cdot s^2 x}{r \cdot c \cdot s^2 x} = r \\ \Rightarrow \frac{r}{c \cdot s^2 x} - \frac{r \cdot c \cdot s^2 x}{c \cdot s^2 x} = r &\Rightarrow \frac{r}{c \cdot s^2 x} = r + r \cdot c \cdot s^2 x \\ \Rightarrow \frac{1}{c \cdot s^2 x} = 1 + c \cdot s^2 x &\Rightarrow \frac{1}{c \cdot s^2 x} = \frac{1 + c \cdot s^2 x}{1} = \frac{1 + \frac{r}{r}}{1} = \frac{1 + r}{1} \\ \Rightarrow \frac{1}{c \cdot s^2 x} = \frac{1 + r}{1} &\Rightarrow \frac{1}{c \cdot s^2 x} = \frac{1 + r}{1} \Rightarrow \frac{1}{c \cdot s^2 x} = \frac{1 + r}{1} \Rightarrow \frac{1}{c \cdot s^2 x} = \frac{1 + r}{1} \end{aligned}$$

$$\begin{aligned} \text{الف) } c \cdot s^2 \frac{\pi}{r} &\Rightarrow c \cdot s^2 \alpha = \frac{1 + c \cdot s^2 \alpha}{1} \Rightarrow c \cdot s^2 \frac{\pi}{r} = \frac{1 + c \cdot s^2 \frac{\pi}{r}}{1} = \frac{1 + \frac{r}{r}}{1} \\ \Rightarrow c \cdot s^2 \frac{\pi}{r} &= \sqrt{\frac{1 + \frac{r}{r}}{1}} = \sqrt{\frac{1 + r}{1}} = \sqrt{1 + r} \\ \Rightarrow \sin(4\pi/r) &= \sin(\frac{\pi}{r} - \frac{\pi}{r}) = c \cdot s^2 \frac{\pi}{r} = \sqrt{1 + r} \end{aligned}$$