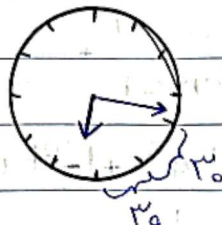


$$9 \times 30 + 15 \times 9 + (30 - \frac{\omega \times 4}{4}) = 90^\circ \quad \text{الف)}$$

$$340 - 90 = 150^\circ$$

$$150 \times \frac{\omega \times 4}{4} - 30 \times 31 = 90$$

$$340 - 90 = 150^\circ$$



$$2 \times 30 + 2 \times 9 + \frac{18}{4} = 11$$

$$10 \times \frac{\omega \times 18}{4} - 30 \times 9 = 11$$

$$ar = \frac{\pi}{4} \times 3 = \frac{\pi}{4}$$

$$\frac{a}{r} = \frac{\pi}{4} \times 3 = \frac{3\pi}{4}$$

$$\frac{1}{4} \times \omega \times 18 \times \sin 40^\circ = 30 \times \frac{\sqrt{3}}{4} = 10\sqrt{3}$$

$$BC = \sqrt{\omega^2 + 18^2 - 2 \times \omega \times 18 \cos 40^\circ} = \sqrt{19 - 18 \times \frac{1}{4}} = \sqrt{49} = 7$$

$$\omega + 7 + 18 = 30$$

$$\hat{B} + \hat{C} = 150^\circ \Rightarrow \hat{A} = 30^\circ \quad \frac{10}{\frac{1}{4}} = \frac{10\sqrt{3}}{\sin B} \Rightarrow \sin B = \frac{\sqrt{3}}{4}$$

$$\sin B = \frac{\sqrt{3}}{4} \Rightarrow B < 45^\circ \quad \hat{B} + \hat{C} = 150^\circ \Rightarrow \hat{C} = 105^\circ$$

$$\hat{B} = 45^\circ = \frac{\pi}{4}$$

$$C = 105^\circ \rightarrow \frac{10\sqrt{3}}{10} = \frac{Rad}{\pi} \Rightarrow Rad = \frac{V\pi}{12} = \hat{C}$$

$$\frac{\tan(\pi - a) + 3 \tan(\pi + a)}{\tan(2\pi - a) - \tan(2\pi + a)} \rightarrow \frac{-\tan a + 3 \tan a}{-\tan a - \tan a}$$

$$= \frac{2 \tan a}{-2 \tan a} = -1$$

$$\frac{\pi}{12} = 15^\circ \quad A = \frac{2 \tan 45^\circ + \tan 15^\circ}{3 \tan 45^\circ - \tan 15^\circ} = \frac{2 \tan(90^\circ - 15^\circ) + \tan(90^\circ - 15^\circ)}{3 \tan(110^\circ - 15^\circ) - \tan(270^\circ - 15^\circ)} \quad -V$$

$$\Rightarrow A = \frac{2 \cot 15^\circ - \cot 15^\circ}{-3 \tan 15^\circ - \cot 15^\circ} = \frac{2 \times \frac{1}{a} - \frac{1}{a}}{-3a - \frac{1}{a}} = \frac{\frac{1}{a}}{\frac{-3a^2 - 1}{a}} = \frac{1}{-3a^2 - 1} = \frac{1}{-3a^2 - 1}$$

$$1 \frac{\sin n + \cos n}{\sin n - \cos n} + \frac{\sin n - \cos n}{\sin n + \cos n} \xrightarrow{\text{تقسيم صورت و مخرج بـ } \cos x} \frac{\tan n + 1}{\tan n - 1} + \frac{\tan n - 1}{\tan n + 1} \quad -A$$

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

$$\Rightarrow 2 \tan^2 n - 2 = 2 \tan^2 n \Rightarrow \tan^2 n = 2$$

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

$$\frac{\sin^2 n - 2 + 2 \sin^2 n + 1}{\sin^2 n + 2 - 2 \sin^2 n - 1} = \frac{3 \sin^2 n - 1}{1 - \sin^2 n} = 2 \Rightarrow 2 - 2 \sin^2 n = 3 \sin^2 n - 1 \Rightarrow 3 = 5 \sin^2 n \Rightarrow \sin^2 n = \frac{3}{5}$$

$$1 + \cot^2 n = \frac{1}{\frac{3}{5}} = \frac{5}{3} \Rightarrow \cot^2 n = \frac{2}{3} \Rightarrow \tan^2 n = \frac{3}{2}$$

$$\text{الف) } \cos(22, 5^\circ) \rightarrow \cos^2 22, 5^\circ = \frac{1 + \cos 45^\circ}{2} = \frac{1 + \frac{\sqrt{2}}{2}}{2} = \frac{2 + \sqrt{2}}{4} = \frac{1 + \sqrt{2}}{2} \Rightarrow \cos 22, 5^\circ = \frac{1 + \sqrt{2}}{2}$$

$$\text{ب) } \sin(45, 5^\circ) \rightarrow \sin^2 45, 5^\circ = \frac{1 - \cos 91^\circ}{2} = \frac{1 - \frac{\sqrt{2}}{2}}{2} = \frac{2 - \sqrt{2}}{4} = \frac{1 - \sqrt{2}}{2} \Rightarrow \sin 45, 5^\circ = \frac{1 - \sqrt{2}}{2}$$