

$$\text{الف) } 1 - Y \sin^2 n = Y \sin^2 n - 1 \rightarrow Y \sin^2 n + Y \sin^2 n - Y = 0 \rightarrow \sin^2 n = \frac{Y \pm 0}{Y} \rightarrow \sin n = \pm \frac{1}{Y} \quad (1)$$

$$\sin n = \pm \frac{1}{Y} \rightarrow \sin n = \pm \sin \frac{\pi}{Y} \rightarrow \begin{cases} n = Yk\pi + \frac{\pi}{Y} \\ n = Yk\pi + \frac{\pi}{Y} \end{cases}$$

$$\rightarrow Y \cos^2 n + \cos n - Y = 0 \rightarrow \cos^2 n = \frac{Y}{Y} \rightarrow \cos n = 1 \rightarrow \cos n = \cos Yk\pi \rightarrow n = Yk\pi$$

$$\text{الف) } -\cos^2 n = Y \sin^2 n \cos^2 n \rightarrow \cos^2 n = 0 \rightarrow Y = k\pi + \frac{\pi}{Y} \rightarrow n = \frac{k\pi}{Y} + \frac{\pi}{Y}$$

$$\rightarrow \sin^2 n = \frac{1}{Y} \rightarrow Y = Yk\pi + \frac{\pi}{Y} \rightarrow n = k\pi + \frac{\pi}{Y}$$

$$\rightarrow Y = Yk\pi - \frac{\pi}{Y} \rightarrow n = k\pi - \frac{\pi}{Y}$$

$$\text{ب) } \sin^2 n = -\cos^2 n \rightarrow \sin^2 n = \sin^2 \left(\frac{Yk\pi}{Y} - n \right) \rightarrow n = Yk\pi + \frac{\pi}{Y} \rightarrow n = \frac{k\pi}{Y} + \frac{\pi}{Y}$$

$$\rightarrow Y = Yk\pi + \frac{\pi}{Y} - \frac{\pi}{Y} + n \rightarrow \text{جواب نکلے}$$

$$\text{الف) } \frac{\cos n}{\sin n} (Y \cos n + 1) = \frac{1}{\sin n} \rightarrow Y \cos^2 n + \cos n - 1 = 0 \rightarrow$$

$$\cos n = \pm \frac{1}{Y} \rightarrow n = Yk\pi \pm \frac{\pi}{Y}$$

$$\cos n = -1 \rightarrow \sin n = 0 \rightarrow 000$$

$$\rightarrow Y - Y \cos^2 n - \sin n \cos n + \cos^2 n = Y \rightarrow \cos^2 n + \sin n \cos n = 0 \rightarrow \cos n (\cos n + \sin n) = 0 \rightarrow$$

$$\cos n = 0 \rightarrow n = k\pi + \frac{\pi}{2}$$

$$\cos n = -\sin n \rightarrow n = k\pi + \frac{\pi}{4}$$

$$\text{الف) } \cos\left(\frac{\pi}{4} + n\right) \times \sin\left(\frac{\pi}{4} + (n - \frac{\pi}{4})\right) = \frac{1}{4} \rightarrow \frac{1}{4} \sin\left(n + \frac{\pi}{4}\right) = \frac{1}{4} \rightarrow \sin\left(n + \frac{\pi}{4}\right) = \frac{1}{4} \quad (5)$$

$$\sin\left(n + \frac{\pi}{4}\right)$$

$$\rightarrow \cos n = \frac{1}{4} \rightarrow n = k\pi \pm \frac{\pi}{4} \rightarrow \boxed{n = k\pi \pm \frac{\pi}{4}}$$

$$\text{ب) } \cos\left(n - \frac{\pi}{4}\right) = \cos\left(\frac{\pi}{4} + n\right) \rightarrow n - \frac{\pi}{4} = k\pi \pm \left(\frac{\pi}{4} + n\right) \rightarrow$$

$$n - \frac{\pi}{4} = k\pi - \frac{\pi}{4} - n \rightarrow n = k\pi + \frac{\pi}{4} - \frac{\pi}{4} = k\pi - \frac{\pi}{4} \rightarrow \boxed{n = \frac{k\pi}{2} - \frac{\pi}{4}}$$

$$\sin n = 0 \rightarrow \sin n \cos n = 0 \xrightarrow{\sin n \neq 0} \cos n = 0 \rightarrow n = k\pi + \frac{\pi}{2} \rightarrow (6)$$

$$\boxed{n = \frac{k\pi}{2} + \frac{\pi}{4}}$$

$$\left(\sin \frac{n}{2}\right)^2 = (1 + \cos \frac{n}{2})^2 \rightarrow \sin^2 \frac{n}{2} = \cos^2 \frac{n}{2} + 2\cos \frac{n}{2} + 1 \rightarrow 2\cos \frac{n}{2} + \cos^2 \frac{n}{2} = 0 \rightarrow$$

$$\cos \frac{n}{2} = 0 \rightarrow \frac{n}{2} = k\pi + \frac{\pi}{2} \rightarrow n = 2k\pi + \pi \rightarrow n = -\pi, \pi, \dots \rightarrow \boxed{|\pi - (-\pi)| = 2\pi}$$

$$\cos \frac{n}{2} = 1 \rightarrow \sin \frac{n}{2} = 0 \rightarrow \text{حل}$$

$$-\sin n (1 + \cos n) = 0 \rightarrow \cos n = -1 \rightarrow n = k\pi + \pi \rightarrow n = \frac{2k\pi}{2} + \frac{\pi}{2} \rightarrow n = \frac{\pi}{2}, \frac{3\pi}{2}, \dots$$

$$\sin n = 0 \rightarrow n = k\pi \rightarrow n = 0, \pi, 2\pi, \dots$$

$$\rightarrow n = \frac{\pi}{2}, \frac{3\pi}{2}, \pi, 2\pi, \dots \rightarrow \boxed{\text{جواب}}$$

$$\tan\left(\frac{\pi}{4} - n\right) = \tan n \rightarrow n = k\pi + \frac{\pi}{4} - n \rightarrow \boxed{n = \frac{k\pi}{2} + \frac{\pi}{4}}$$

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$$1 + \sin \Gamma_n = \sqrt{\cos \Gamma_n} \rightarrow \sqrt{\sin \Gamma_n + \sin \Gamma_n - 1} = 0 \rightarrow \sin \Gamma_n = \frac{1}{\sqrt{2}}$$

⑨

فمن $\sin \Gamma_n = \frac{1}{\sqrt{2}} \rightarrow \Gamma_n = k\pi + \frac{\pi}{4} \rightarrow \boxed{n = k\pi + \frac{\pi}{4}}$ (مكرر)

$$\sin \Gamma_n = -1 \rightarrow \Gamma_n = k\pi + \frac{3\pi}{2} \rightarrow \boxed{n = k\pi + \frac{3\pi}{2}}$$

الف) $\cos \Gamma_n = -1 \rightarrow \Gamma_n = k\pi + \pi \rightarrow n = k\pi + \pi \rightarrow \boxed{n = \frac{\pi}{2}, \frac{3\pi}{2}}$

⑩

ب) ~~نحل~~ $\boxed{n = 0} \rightarrow 0 - 1 = -1 \checkmark$

$n = \frac{\pi}{2} \rightarrow 1 - 0 = 1 \times$

~~$n = \pi$~~ $\rightarrow 0 - 1 = -1 \checkmark$

$n = \pi \rightarrow 0 + 1 = 1 \times$

$\boxed{n = \frac{3\pi}{2}} \rightarrow -1 - 0 = -1 \checkmark$