

« مهدی در سبزه جانی » « تالیف ۱۴ »

①

$\Rightarrow \sin n = \frac{-r \pm \sqrt{r^2 - 1}}{\epsilon} < \begin{matrix} \frac{1}{r} \checkmark \\ -r \times \end{matrix} \rightarrow \sin n = \frac{1}{r}$

$$x = 2k\pi + \frac{\pi}{9} \text{ и } 2k\pi + \pi - \frac{\pi}{9}$$

4) $\cos \gamma_n = \gamma \cos \gamma_{n-1} - 1 \Rightarrow \gamma \cos \gamma_{n-1} - 1 + \cos \gamma_n - \gamma = 0 \Rightarrow \gamma \cos \gamma_{n-1} + \cos \gamma_n - \gamma = 0$

$$\Rightarrow \cos x = \frac{1}{\frac{1}{\sqrt{x}}} \Rightarrow \cos x = 1 \Rightarrow x = 2k\pi$$

الف) $\sin^2 x - \cos^2 x = \sin^2 x - \cos^2 x = -\cos^2 x = \cos^2 x \sin^2 x$

$$\Rightarrow \sin \gamma_n = \frac{-1}{r} \Rightarrow \begin{aligned} \gamma_n &= rK\pi + \frac{\sqrt{r}}{r} \\ \gamma_n &= rK\pi + \pi - \frac{\sqrt{r}}{r} \end{aligned} \quad \left\{ \begin{aligned} \gamma_n &= K\pi + \frac{\sqrt{r}}{r} \\ \gamma_n &= K\pi - \frac{\sqrt{r}}{r} \end{aligned} \right.$$

$$\text{b) } \underbrace{Y \cos \alpha - 1}_{\cos \alpha} + \underbrace{Y \sin \alpha \cos \alpha}_{\sin \alpha} = 0 \Rightarrow \cos \alpha + \sin \alpha = 0 \xrightarrow{Y_{\text{obst}}}$$

$$\Rightarrow \sin \varphi = -1 \Rightarrow \varphi = \frac{3\pi}{2} \Rightarrow x = \frac{3\pi}{4} - \frac{\pi}{4}$$

$$\times \sin x \rightarrow \cos x (r \cos x + 1) = 1 \Rightarrow r \cos^2 x + \cos x - 1 = 0$$

$$\cos x = -\frac{1}{\sqrt{2}} \Rightarrow \begin{cases} x = 2K\pi + \pi \\ x = 2K\pi \pm \frac{\pi}{4} \end{cases}$$

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

$$\Rightarrow \cancel{r} \tan \cancel{r} n - \cancel{r} n + 1 = \cancel{r} + \cancel{r} \tan \cancel{r} n \Rightarrow \tan n = -1$$

$$\rightarrow x = k\pi - \frac{\pi}{2}$$

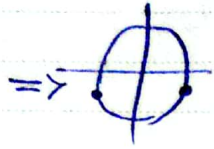
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۸	۹	۱۰	۱۱	۱۲	۱۳	۱۴
۱۵	۱۶	۱۷	۱۸	۱۹	۲۰	۲۱
۲۲	۲۳	۲۴	۲۵	۲۶	۲۷	۲۸
۲۹	۳۰	۳۱	۳۲	۳۳	۳۴	۳۵

Sunday
2023 December

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(۴)

$$\Rightarrow -\sin\left(n - \frac{\pi}{\varepsilon}\right) \Rightarrow \frac{\sin\left(2n - \frac{\pi}{\varepsilon}\right)}{-\varepsilon} = \frac{1}{\varepsilon} \Rightarrow \sin\left(2n - \frac{\pi}{\varepsilon}\right) = \frac{-1}{\varepsilon}$$



$$\Rightarrow 2n - \frac{\pi}{\varepsilon} = 2K\pi - \frac{\pi}{\varepsilon} \Rightarrow n = \begin{cases} K\pi + \frac{\pi}{\varepsilon} \\ K\pi + \frac{\varepsilon\pi}{\varepsilon} \end{cases}$$

$$2n - \frac{\pi}{\varepsilon} = 2K\pi + \frac{\pi}{\varepsilon}$$

$$\text{ب) } \cos\left(2n - \frac{\pi}{\varepsilon}\right) = \cos\left(\frac{\pi}{\varepsilon} + 2n\right) \Rightarrow 2n - \frac{\pi}{\varepsilon} = 2K\pi \pm \left(\frac{\pi}{\varepsilon} + 2n\right)$$

$$\Rightarrow n = \frac{K\pi}{\varepsilon} - \frac{\pi}{2\varepsilon}$$

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

$$\cos 2n = 0 \Rightarrow 2n = 2K\pi \pm \frac{\pi}{2} \Rightarrow n = K\pi \pm \frac{\pi}{4}$$

$$\frac{\sin d}{1 + \cos d} = \alpha \Rightarrow \frac{\sin d}{1 + \cos d} = \frac{1 + \cos d}{\sin d} \Rightarrow \sin^2 d = 1 + \cos^2 d + \varepsilon \cos d$$

$$\sin^2 d - \cos^2 d = 1 + \varepsilon \cos d \Rightarrow \frac{-(\cos^2 d - 1)}{-(\cos^2 d - 1)} = 1 + \varepsilon \cos d$$

$$\Rightarrow -\cos^2 d + 1 = 1 + \varepsilon \cos d \Rightarrow \cos^2 d + \cos d = 0 \Rightarrow \cos d = \begin{matrix} -1 \\ 0 \end{matrix}$$

$$\frac{\alpha}{\varepsilon} = 2K\pi + \pi \Rightarrow n = 2K\pi + \pi$$

$$\frac{\alpha}{\varepsilon} = K\pi + \frac{\pi}{\varepsilon} \Rightarrow n = 2K\pi + \pi$$

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

$$\{x = \frac{1}{2}\pi\}$$

$$\Rightarrow -\cos^2 x = 1 \Rightarrow x = 2K\pi + \pi$$

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$$\Rightarrow x = \frac{2K\pi + \pi}{2}$$

$$\frac{1 - \tan x}{1 + \tan x} = \tan^2 x \Rightarrow \tan\left(\frac{\pi}{2} - x\right) = \tan^2 x$$

①

$$\Rightarrow x = K\pi + \frac{\pi}{2} - x \Rightarrow x = K\pi + \frac{\pi}{2} \Rightarrow x = \frac{K\pi}{2} + \frac{\pi}{4}$$

$$\underline{\text{فصل ۲}} \quad 1 + \sin^2 x = 2 \cos^2 x \Rightarrow 1 + \sin^2 x = 2(1 - \sin^2 x)$$

⑨

$$\Rightarrow 2 - 2 \sin^2 x - 1 - \sin^2 x = 0 \Rightarrow -2 \sin^2 x + \sin x + 1 = 0$$

$$\Rightarrow x = 2K\pi + \frac{\pi}{2} \Rightarrow x = \begin{cases} K\pi + \frac{\pi}{2} \\ K\pi - \frac{\pi}{2} \\ K\pi + \frac{\pi}{12} \end{cases} \Rightarrow \frac{\pi}{2}, \frac{\pi}{12}, \frac{5\pi}{12}$$

۳ جواب

$$\text{الف) } \sin^2 x - \cos^2 x \geq 1 \Rightarrow \cos^2 x = -1 \Rightarrow x = 2K\pi + \pi$$

$$x = \frac{\pi}{2}, \frac{3\pi}{2}$$

$$x = 2K\pi + \frac{\pi}{2}$$

$$\text{ب) } \Rightarrow x = 0, \frac{\pi}{2}, \pi$$

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