

حالا کمبودی نداریم

$$\cos 2n + \cos n - 1$$

(الف) ①

$$\Rightarrow 1 - \cos^2 n + \cos n - 1 \Rightarrow \cos^2 n + \cos n - 2 = 0$$

$$\Rightarrow \Delta = 9 - 4(-1) = 25$$

$$\Rightarrow \sin n = \frac{-1 \pm 2}{2} \quad \begin{array}{l} \nearrow \sin n = 1 \\ \searrow \sin n = -1 \end{array}$$

$$\sin n = 1 \quad \begin{array}{l} \nearrow n = 2k\pi + \frac{\pi}{2} \\ \searrow n = 2k\pi + \pi - \frac{\pi}{2} \end{array}$$

$$\cos 2n + \cos n - 1 = 0$$

ب) ①

$$2\cos^2 n - 1 + \cos n - 1 = 0 \Rightarrow 2\cos^2 n + \cos n - 2 = 0$$

$$\xrightarrow{\text{جمع ضرایب ۰}} \cos n \quad \begin{array}{l} \nearrow \text{①} \\ \searrow \frac{c}{a} = -\frac{1}{2} \end{array}$$

هیچ چیز بیشتر از رهبری که از تصمیم گیری عاجز است، نمی تواند یک تیم را دلسرد کند.

خرداد ۱۳۹۲

۵ شوال ۱۴۳۹

$$Y \sin^2 m \cos^2 m$$

(۲) الف)

$$\sin^2 m - \cos^2 m = \sin^2 m - \cos^2 m$$

$$Y \sin^2 m \cos^2 m + \cos^2 m = 0 \Rightarrow \cos^2 m (Y \sin^2 m + 1) = 0$$

$$\nearrow \cos^2 m = 0$$

$$\searrow Y \sin^2 m + 1 = 0$$

$$(1) \cos^2 m = 0 \Rightarrow m = k\pi \pm \frac{\pi}{2} \rightarrow n = k\pi \pm \frac{\pi}{2}$$

$$(2) Y \sin^2 m + 1 = 0 \Rightarrow \sin^2 m = -\frac{1}{Y} \rightarrow m = k\pi - \frac{\pi}{4} \text{ or } k\pi + \frac{\pi}{4}$$

$$\downarrow m = k\pi + \pi + \frac{\pi}{4} = \frac{Y}{2} k\pi + \frac{\pi}{4}$$

$$Y \cos^2 m + Y \sin^2 m = 1$$

(ب)

$$\rightarrow \frac{Y \cos^2 m - 1}{\cos^2 m} + \frac{Y \sin^2 m \cos^2 m}{\sin^2 m} = 0$$

$$\cos^2 m + \sin^2 m = 0 \Rightarrow (\cos^2 m + \sin^2 m) Y = \cos^2 m + \sin^2 m + Y \sin^2 m \cos^2 m$$

$$\Rightarrow \sin^2 m = -1 \rightarrow m = k\pi + \frac{\pi}{2} \Rightarrow n = \frac{k\pi}{2} + \frac{\pi}{2}$$

(۳) الف) $\cos n (Y \cos n + 1) = \frac{1}{\sin n}$, $\sin n \neq 0$

$\times \frac{\sin n}{\sin n} \rightarrow \cos n (Y \cos n + 1) \leq 1 \Rightarrow Y \cos^2 n + \cos n - 1 \leq 0$

$\rightarrow \cos n \begin{matrix} \nearrow -1 \\ \searrow -\frac{c}{a} = \frac{1}{Y} \end{matrix}$

$\cos n \leq \frac{1}{Y} \rightarrow n \leq Yk\pi + \frac{\pi}{Y}$

$\cos n \leq -1 \rightarrow n \leq Yk\pi + \pi$

$Y \sin^2 n - \sin n \cos n + \cos^2 n \leq Y$ (ب)

$| \sin^2 n + \cos^2 n | \rightarrow \sin^2 n + \sin n \cos n - 1 \leq 0$

راستی $\cos n \neq 0$

$\div \cos^2 n \rightarrow \tan^2 n + \tan n - \frac{1}{\cos^2 n} \leq -\tan n - 1 \leq 0$

$\Rightarrow \tan n \leq -1 \Rightarrow \boxed{n \leq k\pi - \frac{\pi}{Y}}$

راستی $\cos n \neq 0$
 $Y \sin^2 n \leq Y \rightarrow \sin^2 n \leq 1 \Rightarrow \sin n \leq \pm 1$

$\boxed{n \leq k\pi + \frac{\pi}{Y}}$

(۴) الف)

$$\cos\left(\frac{\pi}{r} - n\right)$$

$$\cos\left(\frac{\pi}{r} + n\right) \cos\left(n - \frac{\pi}{r}\right) = \frac{1}{r} \Rightarrow n + \frac{\pi}{r} + \frac{\pi}{r} - n = \frac{\pi}{r}$$

$$\hookrightarrow \cos\left(n + \frac{\pi}{r}\right) \sin\left(n + \frac{\pi}{r}\right) = \frac{1}{r} \sin\left(\cancel{n + \frac{\pi}{r}}\right) = \frac{1}{r}$$

$\cos 2n$

$$\Rightarrow \cos 2n = \frac{1}{r}$$

$$2n = 2k\pi \pm \frac{\pi}{r} \Rightarrow n = k\pi \pm \frac{\pi}{r}$$

$$\cos\left(2n - \frac{\pi}{r}\right) = -\sin 2n$$

(ب)

$$\cos\left(2n - \frac{\pi}{r}\right) = \cos\left(\frac{\pi}{r} - 2n\right) \Rightarrow \cos\left(2n - \frac{\pi}{r}\right) + \cos\left(\frac{\pi}{r} - 2n\right) = 0$$

$$1) \quad \cos A + \cos B = 2 \cos\left(\frac{A+B}{2}\right) \cos\left(\frac{A-B}{2}\right)$$

$$\hookrightarrow \cos\left(2n - \frac{\pi}{r}\right) + \cos\left(\frac{\pi}{r} - 2n\right)$$

$$\hookrightarrow 2 \cos\left(\frac{2n}{2}\right) \cos\left(\frac{2n - \frac{\pi}{r}}{2}\right) = 0$$

$$\cos \frac{\sqrt{r}\pi}{24} \neq 0 / \cos\left(2n - \frac{11\pi}{24}\right) = 0$$

$$2n - \frac{11\pi}{24} = k\pi + \frac{\pi}{2} \Rightarrow 2n = k\pi + \frac{19\pi}{24}$$

$$\Rightarrow n = k\pi + \frac{19\pi}{48}$$

دوستان را در خلوت توبیخ کن و در ملاء عام تحسین.

روز تبلیغ و اطلاع رسانی دینی - سالروز تأسیس سازمان تبلیغات اسلامی - روز اصناف

⑤

لاده ندهی عبارت صورت حال

$$\frac{\sin \pi n}{\sin \pi n} + 1 \pm \frac{\sin^2 \pi n + \cos^2 \pi n}{1}$$

$$\Rightarrow \frac{\gamma \sin \pi n \cos \pi n}{\sin \pi n} = 0 \Rightarrow \gamma \cos \pi n = 0 \Rightarrow \cos \pi n = 0$$

$$\Rightarrow \pi n = \gamma k \pi \pm \frac{\pi}{2} \Rightarrow \underline{\underline{n = k \gamma \pm \frac{1}{2}}}$$

لاده ندهی عبارت صورت حال ④

$$\tan \frac{\pi}{\gamma} = \frac{1}{\gamma} \tan \frac{\pi}{\gamma} + \frac{1}{\gamma} \cot \frac{\pi}{\gamma} + \cot \frac{\pi}{\gamma} \xrightarrow{\text{روشی } t} \boxed{\tan \frac{\pi}{\gamma} = t}$$

$$t = \frac{1}{\gamma} \left(t + \frac{1}{t} \right) + \frac{1-t^2}{\gamma t}$$

$$\Rightarrow t = \frac{t^2+1}{\gamma t} + \frac{1-t^2}{\gamma t} = \frac{1}{t} \Rightarrow t^2 = 1 \Rightarrow t = \pm 1$$

$$\tan \frac{\pi}{\gamma} = \pm 1 \Rightarrow \frac{\pi}{\gamma} = \frac{k\pi}{\gamma} + \frac{\pi}{\gamma} \Rightarrow n = (\gamma k + 1) \pi$$

باتوجه به صورت حال

$$n = -\pi, n = \pi$$

$$n \in [-\pi, \frac{\pi}{\gamma}]$$

$$\hookrightarrow |\pi - (-\pi)| \leq \frac{\pi}{\gamma}$$

$$\cos^2 n - \sin^2 n \cos^2 n = 1$$

⑤

$$\Rightarrow -\sin^2 n \cos^2 n = 1 - \cancel{\cos^2 n} \sin^2 n$$

$$① \sin^2 n = 0 \Rightarrow \sin n = 0 \Rightarrow n = k\pi$$

$$② \sin^2 n \neq 0 \Rightarrow \cos^2 n = -1 \Rightarrow n = k\pi + \pi \Rightarrow n = \frac{k\pi}{2} + \frac{\pi}{2}$$

$$n \in [0, 2\pi] \Rightarrow \underline{n \in \{0, 2\pi\}}$$

①

$$\frac{\tan n - 1}{\tan n + 1} = \tan n$$

$$\Rightarrow \tan\left(\frac{\pi}{4} - n\right) = \frac{\tan \frac{\pi}{4} - \tan n}{\tan \frac{\pi}{4} \tan n + 1} = \frac{1 - \tan n}{1 + \tan n}$$

$$\tan\left(\frac{\pi}{4} - n\right) = \tan n$$

$$\hookrightarrow \frac{\pi}{4} - n = k\pi + n \Rightarrow n = \frac{\pi}{4} - k\pi$$

$$\hookrightarrow \underline{n = \frac{\pi}{4} - \frac{k\pi}{2}}$$

$$\sin^2 n - \cos^2 n = 1 \Rightarrow \sin^2 n - \cos^2 n = 1$$

(۱۰) الف

$$\Rightarrow \cos^2 n = 1 \Rightarrow n = k\pi + \pi \Rightarrow n = k\pi + \frac{\pi}{2}$$

$$n \in \left\{ \frac{3\pi}{2}, \frac{\pi}{2} \right\} \leftarrow n \in [0, 2\pi]$$

$$\sin^2 n - \cos^2 n = 1$$

ب. امتحان (۴) نظای اصلی؛

$$(۱) n = 0 \Rightarrow 0 - (1) = -1 \quad \text{غلط}$$

$$(۲) n = \frac{\pi}{2} \Rightarrow 1 - (0) = 1 \quad \text{غلط}$$

$$(۳) n = \pi \Rightarrow 0 - (-1) = 1 \quad \text{غلط}$$

$$(۴) n = \frac{3\pi}{2} \Rightarrow -1 - (0) = -1 \quad \text{غلط}$$