

الف) $\cos^2 \alpha = P \sin \alpha - 1$ (۱)

$\cos^2 \alpha - \sin^2 \alpha = P \sin \alpha - 1$

$1 - P \sin^2 \alpha = P \sin \alpha - 1$

$\rightarrow P \sin^2 \alpha + P \sin \alpha - P = 0$

$\sin^2 \alpha + P \sin \alpha - 1 = 0$

$\rightarrow (\sin \alpha + 1)(\sin \alpha - 1) = 0$

$\sin \alpha = -1 \quad \sin \alpha = 1$
 $\sin \alpha = \frac{1}{P}$

$\sin \alpha = \frac{1}{P} \rightarrow 180^\circ, 0^\circ, P, P$

$\rightarrow PK\pi + \frac{\pi}{4} / PK\pi + \pi - \frac{\pi}{4}$

ب) $\cos^2 \alpha + \cos \alpha = P$

$\cos^2 \alpha - \sin^2 \alpha + \cos \alpha = P$

$\cos^2 \alpha + \cos^2 \alpha - 1 + \cos \alpha = P \rightarrow P \cos^2 \alpha + \cos \alpha = P$

معادله درجه دوم است
 $\frac{P}{2} \pm \sqrt{\frac{P^2}{4} - P}$

$\cos \alpha = 1 \rightarrow PK\pi \rightarrow PK\pi$

الف) $\sin^2 \alpha - \cos^2 \alpha = \sin \alpha$ (۲)

$1 - \cos^2 \alpha = P \sin \alpha \cos \alpha$

$P \sin \alpha \cos \alpha + \cos^2 \alpha = 0 \rightarrow \cos \alpha (P \sin \alpha + \cos \alpha) = 0$

حالت ۱: $\cos \alpha = 0 \rightarrow \alpha = PK\pi + \frac{\pi}{2}$

حالت ۲: $P \sin \alpha + \cos \alpha = 0 \rightarrow \sin \alpha = -\frac{1}{P} \rightarrow \alpha = PK\pi - \frac{\pi}{4} = PK\pi + \frac{3\pi}{4}$

از لباس کهنه ات خجالت نکش از افکار کهنه ات شرمندة باش.

ب) $\gamma \cos^2 m + \gamma \sin m \cos m = 1$

$\cos^2 m + \sin^2 m = 1 \rightarrow (\cos^2 m + \sin^2 m)$

$\cos^2 m + \sin^2 m + \gamma \sin m \cos m \rightarrow 1 + \sin m$

$\sin m = -1 \rightarrow m = \gamma \pi + \frac{\pi}{2} \rightarrow m = \frac{\gamma \pi}{2} + \frac{\pi}{2}$

الف) $\cot m (\gamma \cos m + 1) = \frac{1}{\sin m}$

$\frac{\cos}{\sin} (\gamma \cos m + 1) = \frac{1}{\sin m} \times \frac{\sin}{\cos}$

$\rightarrow \frac{1}{\cos m} - \frac{\gamma \cos m}{1} = 1 \rightarrow \frac{1 - \gamma \cos^2 m}{\cos m} = 1$

$\rightarrow 1 - \gamma \cos^2 m = \cos m \rightarrow \gamma \cos^2 m + \cos m - 1 = 0$

$\cos^2 m + \cos m - \gamma = 0 \rightarrow (\cos + \gamma)(\cos - 1)$

اگر $-1 = \cos$ باشد $\sin = 0$ است و عبارت تعریف نشده می شود

$\cos m = \frac{\gamma}{\gamma}$

$\cos m = \frac{1}{\gamma}$

پس جواب غیر قابل قبول می شود $\sin = 0$

$\cos m = -1$

$\cos m = \frac{1}{\gamma}$

$\cos m = -1 \rightarrow 180^\circ / \pi$

$\cos m = \frac{1}{\gamma}$

$\rightarrow \gamma \pi + \pi / \gamma \pi + \frac{\pi}{\gamma} / \gamma \pi - \frac{\pi}{\gamma} / \gamma \pi$

ب) $\gamma \sin^2 m - \sin m \cos m + \cos^2 m = \gamma$

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

$-1 + \sin^2 m + \sin m \cos m = 0 \xrightarrow{+ \cos^2 m} + \tan^2 m + \tan m - \frac{1}{\cos^2 m} = 0$

$+ \tan m = -1 \rightarrow m = \gamma \pi - \frac{\pi}{2}$

اگر گناه تنفر داشته باش نگاه کنه

$\rightarrow \gamma \sin^2 m = \gamma \rightarrow \sin^2 m = 1 \rightarrow \sin m = \pm 1$

$m = \gamma \pi + \frac{\pi}{2}$

$$\cos(\pi - \frac{\pi}{2}) = -\sin \pi$$

$$\cos(\pi - \frac{\pi}{2}) = \cos(\frac{\pi}{2} + \pi)$$

$$\pi - \frac{\pi}{2} = \pi + \frac{\pi}{2} \quad \text{و} \quad \pi + \frac{\pi}{2} + \frac{\pi}{2} = 0 \quad \times$$

$$\pi - \frac{\pi}{2} = \pi + \frac{\pi}{2} - \pi$$

$$\pi - \frac{\pi}{2} = \frac{\pi}{2} \quad \text{و} \quad \pi + \frac{\pi}{2} = \frac{3\pi}{2}$$

(K)

پنجشنبه

27 December 2018

دی ۱۳۹۷

۱۹ ربیع الثانی ۱۴۴۰

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$$\cos(\frac{\pi}{K} + \pi) \cos(\frac{\pi}{K} - \pi) = \frac{1}{K}$$

(1)

$$\rightarrow \pi + \frac{\pi}{K} - \pi = \frac{\pi}{K}$$

$$\cos(\pi + \frac{\pi}{K}) \sin(\pi + \frac{\pi}{K}) = \frac{1}{K} \sin(\pi + \frac{\pi}{K}) = \frac{1}{K}$$

از این معادله

$$\cos \pi = -1 \quad \pi = \pi + \frac{\pi}{K} \rightarrow \pi = \pi + \frac{\pi}{K}$$

$$\cos(\pi - \frac{\pi}{K}) = -\sin \pi$$

$$\frac{\sin \pi + \sin \pi}{\sin \pi} - \sin \pi = \cos \pi$$

(2)

جمعه

$$\frac{\sin \pi}{\sin \pi} + 1 = \sin \pi + \cos \pi \rightarrow \frac{\sin \pi \cos \pi}{\sin \pi}$$

(3)

$$\pi \cos \pi = 0 \quad \cos \pi = 0 \quad \pi = \pi + \frac{\pi}{K}$$

$$\rightarrow \pi = \pi + \frac{\pi}{K}$$

اشخاص فرومایه از عیب ها و خطاهای اشخاص بزرگ لذت فراوان می برند.

سالروز تشکیل نهضت سواد آموزی به فرمان امام خمینی (ره) (۱۳۵۸ هـ ش)

۱۲

(۹)

$$\frac{\sin \frac{n}{r}}{1 + \cos \frac{n}{r}} = \frac{1}{\sin \frac{n}{r}} + \cot \frac{n}{r}$$

$$\tan \frac{n}{r} = \frac{1}{\tan \frac{n}{r}} + \cot \frac{n}{r} + \cot \frac{n}{r}$$

$$\tan \frac{n}{r} = t \rightarrow t = \frac{1}{t} \left(t + \frac{1}{t} \right) + \frac{1-t^2}{1+t^2}$$

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

$$\tan \frac{n}{r} = \pm 1 \rightarrow \frac{n}{r} = k\pi + \frac{\pi}{r} \rightarrow n = (rk+1)\pi$$

$$\text{Mod } n \rightarrow n_1 = \pi \quad n_2 = \pi \rightarrow |\pi + \pi| = 2\pi$$

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

$$- \sin^2 m \cos^2 m = 1 - \cos^2 m \rightarrow - \sin^2 m \cos^2 m = \sin^2 m$$

$$\begin{array}{l} \sin^2 m \neq 0 \rightarrow \cos^2 m = -1 \rightarrow m = k\pi + \pi \rightarrow \frac{r}{r} k\pi + \frac{\pi}{r} \\ \sin^2 m = 0 \rightarrow \sin m = 0 \rightarrow m = rk\pi \end{array}$$

$$\rightarrow m \in \{0, \pi\} \Rightarrow \text{دارد دو جواب}$$

$$\frac{1 - \tan m}{1 + \tan m} = \tan km$$

$$\rightarrow \cos km = \tan km \rightarrow \cos km = \frac{\sin km}{\cos km}$$

$$\sin km \times \cos km = \sin km$$

$$\frac{1}{r} \left(\sin \left(\frac{km}{r} \right) + \sin \left(\frac{km}{r} \right) \right) = \sin km$$

$$\frac{1}{r} \sin km = \sin km \rightarrow \frac{1}{r} \sin km \cos km = \sin km$$

$$\cos km = r \rightarrow r \cos km - k \cos m = r$$

هنگامی که کسی آگاهانه تو را نمی فهمد خودت را برای توجیه خسته نکن.

$$\sqrt{1 + \sin^2 m} = \sqrt{2} \cos m$$

(1) (9)

$$\rightarrow \sqrt{1 + \frac{1}{r} \sin m \cos m} = \sqrt{2} (\cos^2 m - \sin^2 m)$$

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

$$\sqrt{\sin^2 m + \cos^2 m + \frac{1}{r} \sin m \cos m} = \sqrt{2} (\cos^2 m - \sin^2 m)$$

$$(\sin + \cos)^2$$

$$|\sin m + \cos m| = \sqrt{2} (1 - \sin^2 m - \sin^2 m)$$

$$|\sin m + \cos m| = \sqrt{2} (1 - r \sin^2 m)$$

$$\text{الف) } \sin^2 m - \cos^2 m = 1$$

$$\sin^2 m - \cos^2 m = 1 \rightarrow \cos^2 m = -1$$

$$r m = k\pi + \pi \rightarrow m = k\pi + \frac{\pi}{r} \rightarrow m \in \left\{ \frac{\pi}{r}, \frac{k\pi}{r} \right\}$$

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

$$\rightarrow m = 0 \rightarrow 0 - (-1) = 1 \checkmark$$

$$m = \frac{\pi}{r} \rightarrow 1 - 0 = 1 \times$$

$$m = \pi \rightarrow 0 - (-1) = 1 \times$$

$$m = \frac{k\pi}{r} \rightarrow -1 - 0 = -1 \checkmark$$

سوال ۷

$$C \cdot \sin^2 u - \sin^2 u \cdot C \cdot \sin^2 u = 1 \xrightarrow{C \cdot \sin^2 u = 1 - \sin^2 u}$$

$$1 - \sin^2 u - \sin^2 u \cdot C \cdot \sin^2 u = 1 \rightarrow \sin^2 u (1 + C \cdot \sin^2 u) = 0 \rightarrow \sin u = 0$$

$$\sin u = 0 \rightarrow u = k\pi \rightarrow u = 0, \pi, 2\pi \rightarrow C \cdot \sin^2 u = 1$$

$$C \cdot \sin^2 u = -1 \rightarrow \sin u = \sqrt{k\pi + \pi} \rightarrow u = \frac{\sqrt{k\pi + \pi}}{\sqrt{3}} \rightarrow u = \frac{\pi}{\sqrt{3}}, \pi, \frac{4\pi}{\sqrt{3}}$$

محدوده ۵ جواب دارد

سوال ۸

$$\tan \frac{\pi}{2} = 1 \rightarrow \frac{1 - \tan u}{1 + \tan u} = \tan \left(\frac{\pi}{2} - u \right)$$

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

$$-u = k\pi - \frac{\pi}{2} \xrightarrow{-k\pi = k\pi} u = k\pi + \frac{\pi}{2}$$

$$u = \frac{k\pi}{2} + \frac{\pi}{4}$$

سوال ۹

$$\sqrt{1 + \sin^2 u} = \sqrt{2} \cos u \xrightarrow{\text{توان ۲}} 1 + \sin^2 u = 2 \cos^2 u$$

$$1 + \sin^2 u = 2 - 2 \sin^2 u \rightarrow 3 \sin^2 u + \sin^2 u - 1 = 0 \rightarrow \sin^2 u = -1$$

$$\sin^2 u = -1 \rightarrow u = k\pi - \frac{\pi}{2} \xrightarrow{0 \leq u \leq \pi} u = \frac{\pi}{2}$$

$$\sin^2 u = \frac{1}{2} \rightarrow u = k\pi + \frac{\pi}{4} \text{ یا } 2k\pi + \frac{5\pi}{4} \xrightarrow{0 \leq u \leq \pi} u = \frac{\pi}{4} \text{ یا } \frac{3\pi}{4}$$

چون عبارت به توان ۲ رسیده است جواب زاویه تولید می کنند
به ازای $C \cdot \sin^2 u = \frac{5\pi}{12}$ متغیر مرصوفه چند جواب را می یابیم و خود را امتحان

۴ محدوده ۲ جواب دارد