

$$\Lambda \cos u = 1 + \tan^2 u \quad \Lambda \cos u = \frac{1}{\cos^2 u} \quad \Lambda \cos^2 u = 1 \quad \cos u = \frac{1}{\sqrt{\Lambda}} \quad 0 \leq u \leq \pi \rightarrow \text{دو جواب} \quad (1)$$

$$\text{if } \sin(u) = 0 \rightarrow \cos(\sqrt{\Lambda}u) = -1 \rightarrow \Lambda \sin^2(u) + \sqrt{\Lambda} \cos(\sqrt{\Lambda}u) = -\sqrt{\Lambda} \quad \sin u = 0 \rightarrow u = k\pi \quad (I) \\ \cos(\sqrt{\Lambda}u) = -1 \rightarrow \sqrt{\Lambda}u = 2k\pi + \pi \quad (II) \quad I \cap II \quad \frac{-\pi \leq u \leq \pi}{\Lambda} \rightarrow u = \{-\pi, \pi\} \quad \text{دو جواب}$$

$$\sqrt{\Lambda} \sin u (1 - \sqrt{\Lambda} \sin^2 u) + \sin u = 1 \quad \sqrt{\Lambda} \sin u - \sqrt{\Lambda} \sin^3 u + \sin u = 1 \quad \sqrt{\Lambda} \sin u - \sqrt{\Lambda} \sin^3 u = 1 \\ \sin \sqrt{\Lambda}u = 1 \quad \sqrt{\Lambda}u = 2k\pi + \frac{\pi}{2} \quad u = \frac{2k\pi}{\sqrt{\Lambda}} + \frac{\pi}{2} \quad u = \left\{ \frac{\pi}{2}, \frac{3\pi}{2}, \frac{5\pi}{2} \right\} \quad \text{جواب: } \frac{13\pi}{2} = \frac{13\pi}{2}$$

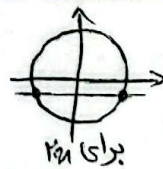
$$\frac{1}{\sin(\frac{\pi}{\sqrt{\Lambda}} + \sqrt{\Lambda}u)} + \frac{1}{\cos(\frac{\pi}{\sqrt{\Lambda}} + \sqrt{\Lambda}u)} = \frac{1}{\cos \sqrt{\Lambda}u} - \frac{1}{\sin \sqrt{\Lambda}u} = \frac{1}{\cos \sqrt{\Lambda}u} - \frac{1}{\sqrt{\Lambda} \cos \sqrt{\Lambda}u \sin \sqrt{\Lambda}u} = \frac{\sqrt{\Lambda} \sin \sqrt{\Lambda}u - 1}{\cos \sqrt{\Lambda}u \sin \sqrt{\Lambda}u} = 0 \quad (5) \\ \sin \sqrt{\Lambda}u = \frac{1}{\sqrt{\Lambda}} \quad \sqrt{\Lambda}u = 2k\pi + \frac{\pi}{2} \quad u = k\pi + \frac{\pi}{2\sqrt{\Lambda}} \quad \sqrt{\Lambda}u = 2k\pi + \pi - \frac{\pi}{2} \quad u = k\pi + \frac{3\pi}{2\sqrt{\Lambda}} \\ 0 \leq u \leq \pi \rightarrow u = \left\{ \frac{\pi}{2\sqrt{\Lambda}}, \frac{3\pi}{2\sqrt{\Lambda}} \right\} \quad \alpha = \frac{5\pi}{12} = \frac{\pi}{\sqrt{\Lambda}} \quad \tan \frac{\pi}{\sqrt{\Lambda}} = -\sqrt{\Lambda}$$

$$\cos(u + \frac{\pi}{\sqrt{\Lambda}}) = \cos(u - \frac{\pi}{\sqrt{\Lambda}} + \frac{2\pi}{\sqrt{\Lambda}}) = -\sin(u - \frac{\pi}{\sqrt{\Lambda}}) = \frac{\sqrt{\Lambda}}{\sqrt{\Lambda}} (\cos u - \sin u) = \frac{\sqrt{\Lambda}}{\sqrt{\Lambda}} \rightarrow \cos u - \sin u = \frac{\sqrt{\Lambda}}{\sqrt{\Lambda}} \\ \sin \sqrt{\Lambda}u = 1 - (\cos u - \sin u)^2 = 1 - \frac{\Lambda}{\Lambda} = \frac{1}{\Lambda} \quad \frac{\sqrt{\Lambda}}{\sqrt{\Lambda}} m - \sqrt{\Lambda} (\frac{1}{\sqrt{\Lambda}}) = \sqrt{\Lambda} \quad \frac{\sqrt{\Lambda}}{\sqrt{\Lambda}} m = \sqrt{\Lambda} \quad m = \sqrt{\Lambda}$$

$$\sin(u - \frac{\pi}{\sqrt{\Lambda}} + \frac{\pi}{\sqrt{\Lambda}}) \cos(u - \frac{\pi}{\sqrt{\Lambda}}) = 1 \quad \cos^2(u - \frac{\pi}{\sqrt{\Lambda}}) = 1 \quad \cos(u - \frac{\pi}{\sqrt{\Lambda}}) = \pm 1 \quad u - \frac{\pi}{\sqrt{\Lambda}} = k\pi \\ u = k\pi + \frac{\pi}{\sqrt{\Lambda}} \quad 0 \leq u \leq \pi \rightarrow u = \left\{ \frac{\pi}{\sqrt{\Lambda}}, \frac{3\pi}{\sqrt{\Lambda}} \right\} \quad \text{دو جواب}$$

$$\sin u + \frac{\sin \frac{\pi}{\sqrt{\Lambda}}}{\cos \frac{\pi}{\sqrt{\Lambda}}} \cos u = \sqrt{\Lambda} \quad \frac{\sin u \cos \frac{\pi}{\sqrt{\Lambda}} + \sin \frac{\pi}{\sqrt{\Lambda}} \cos u}{\cos \frac{\pi}{\sqrt{\Lambda}}} = \sqrt{\Lambda} \quad \frac{\sin(u + \frac{\pi}{\sqrt{\Lambda}})}{\frac{1}{\sqrt{\Lambda}}} = \sqrt{\Lambda} \quad (V) \\ \sin(u + \frac{\pi}{\sqrt{\Lambda}}) = \frac{\sqrt{\Lambda}}{\sqrt{\Lambda}} \quad u + \frac{\pi}{\sqrt{\Lambda}} = 2k\pi + \frac{\pi}{2} \quad u = 2k\pi - \frac{\pi}{\sqrt{\Lambda}} \quad u + \frac{\pi}{\sqrt{\Lambda}} = 2k\pi + \pi - \frac{\pi}{2} \quad u = 2k\pi + \frac{3\pi}{2\sqrt{\Lambda}} \\ -\pi \leq u \leq \pi \rightarrow u = \left\{ -\frac{\pi}{\sqrt{\Lambda}}, \frac{\pi}{\sqrt{\Lambda}}, \frac{3\pi}{2\sqrt{\Lambda}} \right\} \quad \text{جواب: } \frac{11\pi}{2\sqrt{\Lambda}}$$

$$\sqrt{\Lambda} \sin u (-\cos u) = 1 \quad -\sqrt{\Lambda} \sin \sqrt{\Lambda}u = 1 \quad \sin \sqrt{\Lambda}u = -\frac{1}{\sqrt{\Lambda}} \quad \text{دو جواب: } \frac{10\pi}{9} + \frac{11\pi}{9} + \pi + \frac{10\pi}{9} + \pi + \frac{11\pi}{9} = 10\pi \\ \text{دو جواب: } \frac{10\pi}{9} = \frac{10\pi}{9} \quad \text{دو جواب: } \frac{10\pi}{9} = \frac{10\pi}{9}$$



$$(\sqrt{\Lambda} \cos^2 \alpha)(\sqrt{\Lambda} \cos^2 \sqrt{\Lambda} \alpha)(\sqrt{\Lambda} \cos^2 5\alpha) = \frac{1}{\Lambda} \rightarrow |(\cos \alpha)(\cos \sqrt{\Lambda} \alpha)(\cos 5\alpha)| = \frac{1}{\Lambda} \quad \frac{|\sin \alpha|}{|\sin \alpha|} \\ \frac{|\frac{1}{\sqrt{\Lambda}} \sin \sqrt{\Lambda} \alpha| (\cos \sqrt{\Lambda} \alpha)(\cos 5\alpha)}{|\sin \alpha|} = \frac{1}{\Lambda} \quad \frac{\frac{1}{\Lambda} |\sin \Lambda \alpha|}{|\sin \alpha|} = \frac{1}{\Lambda} \quad |\sin \Lambda \alpha| = |\sin \alpha| \quad (9)$$

$$\sin \Lambda \alpha = \sin \alpha \rightarrow \Lambda \alpha = 2k\pi + \alpha \quad \alpha = \frac{2k\pi}{\Lambda} \quad \Lambda \alpha = 2k\pi + \pi - \alpha \quad \alpha = \frac{2k\pi}{\Lambda} + \frac{\pi}{\Lambda} \\ \sin \Lambda \alpha = -\sin \alpha = \sin(\pi + \alpha) \quad \Lambda \alpha = 2k\pi + \pi + \alpha \quad \alpha = \frac{2k\pi}{\Lambda} + \frac{\pi}{\Lambda} \quad \Lambda \alpha = 2k\pi + \pi - \pi - \alpha \\ \alpha = \frac{2k\pi}{\Lambda} \quad \alpha_{\max} = \frac{\Lambda \pi}{\Lambda}$$

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$$\tan(13\theta) = \frac{1}{\tan\theta} = \cot\theta = \tan\left(\frac{\pi}{2} - \theta\right) \quad 13\theta = K\pi + \frac{\pi}{2} - \theta \quad 14\theta = K\pi + \frac{\pi}{2} \quad (10)$$

$$\theta = \frac{K\pi}{14} + \frac{\pi}{14} \quad \text{مجموع} = \pi + \frac{\pi}{14} + \frac{11\pi}{14} + \frac{13\pi}{14} + \frac{15\pi}{14} = 6\pi$$