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مطلوب

(17)

مشتقات

باران آسیایی

$$1 \cos x - \tan^2 x = 1 \quad 1$$

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

$$\rightarrow 1 \cos^2 x = \underbrace{\sin^2 x + \cos^2 x}_1 \rightarrow \cos^2 x = \frac{1}{1} \rightarrow \cos x = \frac{1}{1}$$

$$\text{جواب هاد } \left[\frac{\pi}{2}, \frac{3\pi}{2} \right] \leftarrow \frac{\pi}{2} \leftarrow \frac{3\pi}{2}$$

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

$$2 - 2 \cos^2 x + 1 \cos^2 x - 4 \cos^2 x = -2$$

$$\cos x = t$$

$$1t^2 - 2t^2 - 4t + 2 = 0$$

$$(t+1)(1t^2 - 1^2t + 2) \rightarrow t = -1$$

$$\cos x = -1$$

$$\text{د } [-\pi, \pi] \text{ سے } -\pi, \pi \text{ (جواب)}$$

$$r \sin x \cos x + \sin x = 1 \quad -r$$

$$-r \sin^2 x + 1$$

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

$$\sin x = t \rightarrow -rt^2 + rt - 1 = 0 \quad \begin{cases} t = -1 \\ t = \frac{1}{r} \end{cases}$$

$$\sin x = -1$$

$$\sin x = \frac{1}{r}$$

$$\frac{\pi}{4}, \frac{\pi}{4}, \frac{3\pi}{4} : [0, 2\pi] \text{ جواب ها}$$

$$\text{مثلاً: } \frac{\pi}{4} + \frac{\pi}{4} + \frac{\pi}{4} = \frac{\pi}{2}$$

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$$\frac{1}{\sin\left(\frac{\pi + \epsilon x}{r}\right)} + \frac{1}{\cos\left(\frac{\pi + \lambda x}{r}\right)} = 0 \quad -K$$

$$\frac{1}{\sin\left(\frac{\pi + \epsilon x}{r}\right)} = - \frac{1}{\cos\left(\frac{\pi + \lambda x}{r}\right)}$$

$$-\cos\left(\frac{\pi + \lambda x}{r}\right) = \sin\left(\frac{\pi + \epsilon x}{r}\right)$$

$$-\sin\left(\frac{\pi}{r} - \frac{\pi + \lambda x}{r}\right) = \sin\left(\frac{\pi + \epsilon x}{r}\right)$$

$$-\sin\left(-\frac{\lambda x}{r}\right) = \sin\left(\frac{\pi + \epsilon x}{r}\right)$$

$$\sin \epsilon x = \sin\left(\frac{\pi}{r} + \lambda x\right)$$

$$\Rightarrow \epsilon x = rK\pi + \frac{\pi}{r} + \lambda x$$

$$\lambda x = rK\pi + \frac{\pi}{r} \rightarrow x = K\pi + \frac{\pi}{\epsilon}$$

$$\frac{r\pi}{\epsilon}, \frac{\pi}{\epsilon} \in [0, \pi] \text{ Solu } \circ$$

$$\text{Sol } \rightarrow \frac{\pi}{r} = \alpha \Rightarrow \tan \alpha = \tan \gamma \quad \text{--- } \circ$$

$$m(\cos x - \sin x) - r\sqrt{4} \sin \lambda x = \sqrt{4} \quad -d$$

$$\cos\left(x + \frac{\pi}{\epsilon}\right) = \frac{1}{\sqrt{r}}$$

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$$m \frac{\sqrt{4}}{r} - r\sqrt{4} \sin \lambda x = \sqrt{4}$$

$$\frac{\sqrt{r}}{r} \cos x - \frac{\sqrt{r}}{r} \sin x = \frac{1}{\sqrt{r}}$$

$$\sqrt{4} \left(\frac{m}{r} - r \sin \lambda x \right) = \sqrt{4} \quad |$$

$$\frac{\sqrt{r}}{r} (\cos x - \sin x) = \frac{1}{\sqrt{r}}$$

$$\frac{m}{r} - 1 = 1$$

$$\hookrightarrow \frac{m}{r} = 2 \quad \boxed{m = 4}$$

$$\cos x - \sin x = \frac{1}{\sqrt{r}} = \frac{r}{\sqrt{4}} \cdot \frac{\sqrt{4}}{r} = \frac{r\sqrt{4}}{4} = \frac{\sqrt{4}}{r} \rightarrow \cos x - \frac{\sqrt{4}}{r} = \sin x$$

$$\cos x + \sin x = 1 \quad (\cos x - \sin x)^2 = \frac{4}{r} = \frac{r}{r}$$

$$\cos^2 x + \sin^2 x - 2 \sin x \cos x$$

$$1 - \sin^2 x = \frac{r}{r} \rightarrow \sin^2 x = \frac{1}{r}$$

PITICO

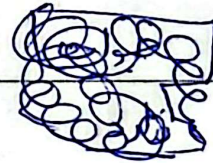
$$\sin\left(x + \frac{\pi}{4}\right) \cos\left(x - \frac{\pi}{4}\right) = 1$$

$$\left(\sin x \times \frac{\sqrt{r}}{r} + \cos x \times \frac{1}{r}\right) \left(\cos x \times \frac{1}{r} + \sin x \left(\frac{-\sqrt{r}}{r}\right)\right) = 1 \quad -9$$

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

$$\begin{cases} \sin^2 x + \cos^2 x = 1 \\ -r \sin^2 x + \cos^2 x = r \end{cases}$$

$$r \sin^2 x = -r \sin^2 x = \frac{-r}{r}$$



جواب

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$$\sin x + \sqrt{r} \cos x = \sqrt{r} \quad [-\pi, \pi]? \quad -V$$

$$\frac{|a|}{a} \sqrt{a^2 + b^2} \sin(x + \alpha)$$

$$\hookrightarrow r \sin\left(x + \frac{\pi}{4}\right) = \sqrt{r}$$

$$\tan \alpha = \sqrt{r} \rightarrow \alpha = \frac{\pi}{4}$$

$$\sin\left(x + \frac{\pi}{4}\right) = \frac{\sqrt{r}}{r} \Rightarrow x + \frac{\pi}{4} = 2k\pi + \frac{\pi}{4}$$

$$x = 2k\pi - \frac{\pi}{4}$$

$$x \rightarrow 2\pi - \frac{\pi}{4} = \frac{7\pi}{4} \quad \text{for } k=0 \quad \text{and} \quad 2\pi - \frac{\pi}{4} = \frac{7\pi}{4} \quad \text{for } k=1$$

$$\hookrightarrow 2\pi - \frac{\pi}{4} = \frac{7\pi}{4}$$

$$2 \sin x \sin\left(\frac{3\pi}{4} - x\right) = 1$$

$$= \cos x$$

$$= 2 \sin x \cos x$$

$$= 2 \sin 2x = 1$$

$$\sin(2x) = \frac{1}{2}$$

$$[0, 2\pi]$$

$$2x = \frac{\pi}{6} \text{ و } \frac{5\pi}{6}$$

$$\rightarrow x = \frac{\pi}{12} \text{ و } \frac{5\pi}{12}$$

$$\text{یعنی} \rightarrow \frac{\pi}{12} + \frac{5\pi}{12} = \frac{6\pi}{12} = \frac{\pi}{2} \quad (4\pi)$$

$$(1 + G_S \Gamma \alpha)(1 + G_S \epsilon \alpha)(1 + G_S \Lambda \alpha) = \frac{1}{\Lambda} \quad - 9$$

$$1 + G_S \alpha = \sqrt{G_S \frac{\alpha}{\rho}}$$

$$\Rightarrow G_S \frac{\alpha}{\rho} G_S \alpha G_S \Gamma \alpha G_S \epsilon \alpha = \frac{1}{\Lambda \sqrt{\rho}}$$

$$\alpha_{\max} = \frac{\pi}{\rho}$$

$$\tan x \tan x = 1$$

$$= 1$$

$$\frac{\sin x}{\cos x} \times \frac{\sin x}{\cos x}$$

$$\frac{\sin x \sin x}{\cos x \cos x} = 1$$

$$\sin x \sin x$$

$$\sin x \sin x \cos x \cos x$$

$$-$$

$$\cos x \cos x - \sin x \sin x = 0$$

$$\cos x = 0 \quad \text{or} \quad x = k\pi \pm \frac{\pi}{2}$$

$$x = \frac{k\pi}{2} \pm \frac{\pi}{2}$$

$$x \rightarrow \pi + \frac{\pi}{2}, \frac{3\pi}{2} - \frac{\pi}{2}, \frac{5\pi}{2} + \frac{\pi}{2}, 2\pi - \frac{\pi}{2}$$

$$\rightarrow 4\pi$$