

$$\Lambda \cos \theta = \frac{1}{\cos^2 \theta} \Rightarrow \Lambda \cos^3 \theta = 1 \Rightarrow \cos^3 \theta = \frac{1}{\Lambda} \Rightarrow \theta \Rightarrow \left\{ \frac{\pi}{3}, \frac{4\pi}{3} \right\} \quad (1)$$

$$2 \sin^2 \theta + 2 \cos^3 \theta = -1 \Rightarrow -1 \cos^3 \theta + \Lambda \cos^3 \theta - 2 \cos^3 \theta + 1 = 0 \quad (2)$$

$$\Rightarrow (\cos^3 \theta + 1)(\Lambda \cos^3 \theta - 1^3 \cos^3 \theta + 1) = 0$$

جواب ندارد
 $\cos^3 \theta = -1 \Rightarrow \cos \theta = -1 \Rightarrow \theta = \pi$

$$2 \sin \theta (1 - 2 \sin^2 \theta) + \sin \theta = 1 \quad (3)$$

$$\Rightarrow 2 \sin^3 \theta - 2 \sin \theta + 1 = 0 \Rightarrow (\sin \theta + 1)(2 \sin^2 \theta - 2 \sin \theta + 1) = 0 \quad (4)$$

$\sin \theta = -1 \Rightarrow \theta = \frac{3\pi}{2}$
 $\sin \theta = \frac{1}{2} \Rightarrow \theta = \frac{\pi}{6}, \frac{5\pi}{6}$
 $\Rightarrow \theta = \left\{ \frac{3\pi}{2}, \frac{\pi}{6}, \frac{5\pi}{6} \right\}$

$$\frac{\sin(\theta + \frac{\pi}{2})}{\sin(\theta + \frac{\pi}{2})} + \frac{\cos(\theta + \frac{\pi}{2})}{\cos(\theta + \frac{\pi}{2})} = \frac{1}{\cos \theta} - \frac{1}{\sin \theta}$$

$$\Rightarrow \frac{\sin \theta - \cos \theta}{\cos \theta \sin \theta} \Rightarrow 2 \sin \theta \cos \theta = \cos \theta \sin \theta = 0$$

$$\cos \theta \sin \theta (2 \sin \theta - 1) = 0$$

$$\sin \theta = \frac{1}{2} \Rightarrow \theta = \left\{ \frac{\pi}{6}, \frac{5\pi}{6} \right\}$$

$$\cos^2 \theta = \sin^2 \theta \neq 0 \Rightarrow \theta = \left\{ \frac{\pi}{4}, \frac{3\pi}{4} \right\}$$

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 صیغه تکرار دانه مثل دانه بانه

$$\Rightarrow \Delta \theta = \frac{\pi}{12}, \frac{\pi}{12} \Rightarrow \tan \frac{\pi}{12} = -\tan \frac{\pi}{12} = (-\sqrt{3})$$

SUBJECT :

$$\sin\left(u + \frac{\pi}{5}\right)$$

DATE :

$$\sin\left(u + \frac{\pi}{5}\right) \cos\left(u - \frac{\pi}{5}\right) = \sin^2\left(u + \frac{\pi}{5}\right)$$

(5)

$$\Rightarrow \sin\left(u + \frac{\pi}{5}\right) = \pm 1 \Rightarrow u = k\pi + \frac{\pi}{5} \Rightarrow u = \left\{\frac{\pi}{5}, \frac{7\pi}{5}\right\}$$

$$\sin u + \sqrt{2} \cos u = \sqrt{2} \sin\left(u + \frac{\pi}{4}\right) = \sqrt{2} \Rightarrow \sin\left(u + \frac{\pi}{4}\right) = \frac{\sqrt{2}}{\sqrt{2}}$$

(V)

$$\Rightarrow u + \frac{\pi}{4} = \frac{\pi}{2} \text{ or } \frac{3\pi}{2} \Rightarrow u = \left\{-\frac{\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4}, \frac{11\pi}{4}\right\}$$

$$u + \frac{\pi}{4} = 2k\pi + \frac{\pi}{2} \Rightarrow u = 2k\pi + \frac{\pi}{4} \quad \text{جواب ها} \quad \frac{0 + 2\pi + (-1)}{4} = \frac{2\pi - 1}{4} = \frac{2\pi}{4} = \frac{\pi}{2}$$

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

(A)

$$\Rightarrow 2u = 2k\pi + \frac{4\pi}{5} \Rightarrow u = \frac{2k\pi}{5} + \frac{2\pi}{5} \Rightarrow u = \frac{2\pi}{5}, \frac{8\pi}{5}$$

$$2u = 2k\pi + 11\frac{\pi}{5} \Rightarrow u = \frac{11\pi}{5}, \frac{13\pi}{5}$$

$$\Rightarrow \left(\frac{2\pi}{5}, \frac{8\pi}{5}, \frac{11\pi}{5}, \frac{13\pi}{5} \right) \Rightarrow \left(\frac{2\pi}{5}, \frac{8\pi}{5} \right)$$

$$\sqrt{2} \cos u - \sqrt{2} \sin u = \frac{1}{\sqrt{2}} \Rightarrow \sqrt{2} \cos u - \sqrt{2} \sin u = \frac{1}{\sqrt{2}}$$

(9)

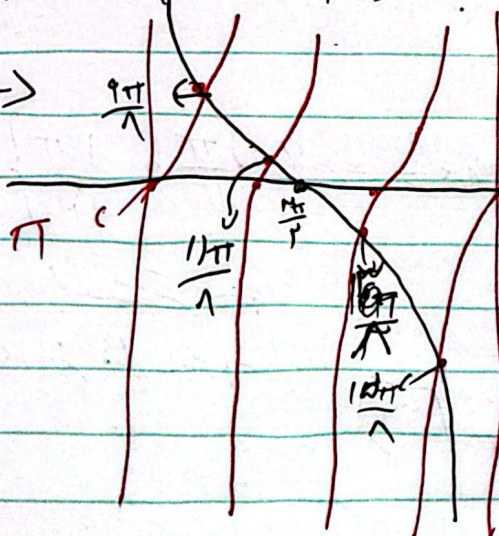
$$\Rightarrow \frac{1}{\sqrt{2}} \sin^2 u = \frac{\sin^2 u}{\sqrt{2}} \Rightarrow \sin^2 u = \frac{\sqrt{2}}{2} \Rightarrow u = \left\{\frac{\sqrt{2}\pi}{9}, \frac{8\pi}{9}\right\}$$

$\Rightarrow$

$$\tan^2 u \tan^2 u = 1 \Rightarrow \tan^2 u = \cot^2 u$$

$$\Rightarrow \frac{9\pi}{11} \Rightarrow u = \left\{\frac{9\pi}{11}, \frac{11\pi}{11}, \frac{13\pi}{11}, \frac{10\pi}{11}\right\}$$

$$\Sigma u = \pi$$



$$\cos 2x = 1 - 2\sin^2 x \quad (\text{فرمول ظاهری})$$

$$2\sin x(1 - 2\sin^2 x) + \sin x = 1 \rightarrow 2\sin x - 4\sin^3 x = 1$$

$$\sin 3x = 1 \rightarrow 3x = 2k\pi + \frac{\pi}{2} \rightarrow x = \frac{2k\pi}{3} + \frac{\pi}{6} \quad \cdot \leq x \leq 2\pi$$

$$k < 0 \rightarrow x = \frac{\pi}{6}, \quad k = 1 \rightarrow x = \frac{5\pi}{6}, \quad k = 2 \rightarrow x = \frac{9\pi}{6}$$

$$S = \frac{\pi}{6} + \frac{5\pi}{6} + \frac{9\pi}{6} = \frac{15\pi}{6} = \boxed{\frac{5\pi}{2}}$$

عبارت ۱ را $\frac{1}{r}$ ضرب می‌کنیم. (۷)

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

$$\cos 4^\circ \sin x + \sin 4^\circ \cos x = \frac{\sqrt{r}}{r} \rightarrow \sin(x + \frac{\pi}{4}) = \frac{\sqrt{r}}{r}$$

$$x + \frac{\pi}{4} = 2k\pi + \frac{\pi}{4} \rightarrow x = 2k\pi \quad \xrightarrow{-\pi \leq x \leq 2\pi} \quad k < 0, 1 \rightarrow x = -\frac{\pi}{4}, \frac{7\pi}{4}$$

$$x + \frac{\pi}{4} = 2k\pi + \frac{3\pi}{4} \rightarrow x = 2k\pi + \frac{\pi}{2} \quad \xrightarrow{-\pi \leq x \leq 2\pi} \quad k < 0 \rightarrow x = \frac{3\pi}{2}$$

$$S = \frac{7\pi}{4} - \frac{\pi}{4} + \frac{3\pi}{2} = \frac{6\pi}{2} = \boxed{3\pi}$$