

14, 17, 18

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دوازدهم و دهم  
سیف 17

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

$$\lambda \cos x = 1 + \tan^2 x$$

$$\frac{1}{\cos^2 x}$$

$$\lambda \cos^2 x = 1 \quad \cos^2 x = \frac{1}{\lambda} \quad \cos x = \frac{1}{\sqrt{\lambda}}$$



$$2k\pi + \frac{\pi}{4} = x \quad \left(\frac{\pi}{4}\right),$$

$$2k\pi - \frac{\pi}{4} = x \quad \left(\frac{5\pi}{4}\right)$$

جواب 2

$$\omega \sin^2 x + \gamma \cos^2 x = -\gamma$$

$$\gamma \cos^2 x = -\gamma - \omega \sin^2 x \quad -\gamma \leq -\gamma - \omega \sin^2 x \leq \gamma$$

$$-\gamma \leq \gamma \cos^2 x \leq \gamma$$

$$\gamma \sin(x) \cos(x) + \sin(x) = 1$$

$$\gamma \sin(x) (1 - \gamma \sin^2 x) + \sin(x) = 1$$

$$\gamma \sin^2 x - \gamma \sin^4 x = 1$$

$$\sin(2x) = 1$$

$$2k\pi + \frac{\pi}{2} = 2x \quad x = \frac{2k\pi}{2} + \frac{\pi}{4} \rightarrow \frac{\pi}{4}$$

$$\frac{2\pi}{2} \leftarrow \frac{1\pi}{2} \leftarrow \frac{2\pi}{4} + \frac{\pi}{4} + \frac{\pi}{4} \rightarrow \frac{3\pi}{4}$$

$$\frac{1}{\sin(\frac{\pi}{4} + \gamma x)} + \frac{1}{\cos(\frac{\pi}{4} + \gamma x)} = 0$$

$$\frac{-\sin \gamma x}{\cos \gamma x} = \frac{\sin \gamma x}{\cos \gamma x}$$

$$\frac{1}{\cos^2 x} - \frac{1}{\sin^2 x} = 0$$

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

$$x = k\pi + \frac{\pi}{4}$$

$$\gamma x = \gamma k\pi + \frac{\gamma \pi}{4}$$

$$\gamma x = \gamma k\pi + \frac{\pi}{4}$$

$$\gamma \sin^2 x \cos^2 x = \cos^2 x$$

$$\gamma \sin^2 x = 1 \quad \sin^2 x = \frac{1}{\gamma}$$

$$\frac{2\pi}{4} - \frac{\pi}{4} = \frac{\pi}{4} \rightarrow \frac{\pi}{4}$$

$$\tan\left(\frac{\pi}{4}\right) = -\sqrt{3}$$

$$m(\cos x - \sin x) - \sqrt{4} \sin^2 x = \sqrt{4}$$

$$m(\cos x - \sin x) = \sqrt{4}$$

$$m^2 \times (1 - \gamma \sin^2 x) = \frac{\gamma \gamma}{1 - \sin^2 x}$$

$$\frac{\gamma \gamma}{\gamma} = \gamma^2$$

$$m = \pm 4$$

$$\cos(x + \frac{\pi}{4}) = \frac{1}{\sqrt{2}}$$

$$\cos(\gamma x + \frac{\pi}{4}) = \gamma \cos(x + \frac{\pi}{4}) - 1$$

$$\frac{\gamma}{\sqrt{2}} - \frac{\gamma}{\sqrt{2}} = -\frac{1}{\sqrt{2}}$$

$$\sin^2 x = \frac{1}{\gamma}$$

$$\cos^2 x = \gamma \cos^2 x - 1$$

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

$$\cos(\frac{\pi}{4} - x)$$

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

$$\sin(x + \frac{\pi}{4})$$

$$\sin^2(x + \frac{\pi}{4}) = 1$$

$$\sin(x + \frac{\pi}{4}) = 1 \quad x + \frac{\pi}{4} = 2k\pi + \frac{\pi}{2}$$

$$\sin(x + \frac{\pi}{4}) = -1 \quad x + \frac{\pi}{4} = 2k\pi + \frac{3\pi}{2}$$

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

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

$$r \sin \alpha \sin \left( \frac{r\pi}{r} - \alpha \right) = 1$$

$$- \cos \alpha$$

$$-r \sin \alpha \cos \alpha = 1$$

$$-r (\cancel{r \sin \alpha} \cos \alpha) = 1$$

$$-r \sin \alpha$$



$$\sin \alpha = -\frac{1}{r}$$

$$r \alpha = r k \pi - \frac{\pi}{4}$$

$$r_m = r k \pi + \pi + \frac{\pi}{4}$$

$$r \alpha + r \gamma = \frac{11\pi}{12} + \frac{r \pi}{12} + \frac{r \pi}{12} + \frac{r \pi}{12} = \frac{4 \cdot \pi}{12} = \pi$$

$$\alpha = k\pi - \frac{\pi}{4}$$

$$\alpha = k\pi + \frac{\pi}{4}$$

$$\frac{11\pi}{12} + \frac{r \pi}{12} + \frac{r \pi}{12} + \frac{r \pi}{12} = \frac{4 \cdot \pi}{12} = \pi$$

$$(1 + \cos \alpha) (1 + \cos \alpha) (1 + \cos \alpha) = \frac{1}{\Lambda}$$

$$\frac{1}{r \cos \alpha} \frac{1}{r \cos \alpha} \frac{1}{r \cos \alpha} = \frac{1}{\Lambda}$$

$$\frac{1}{r \cos \alpha} \cos \alpha \cos \alpha \cos \alpha = \pm \frac{1}{\Lambda}$$

$$\frac{1}{r} \sin \alpha \cos \alpha$$

$$\frac{1}{r} \sin \alpha \cos \alpha \quad \frac{1}{\Lambda} \sin \alpha = \pm \frac{1}{\Lambda}$$

$$\sin \alpha = \sin(-\Lambda \alpha)$$

$$\alpha = r k \pi - \Lambda \alpha$$

$$\alpha = r k \pi + \pi + \Lambda \alpha$$

$$-\Lambda \alpha = r k \pi + \pi$$

$$\alpha = \frac{r k \pi + \pi}{-\Lambda}$$

$$\sin \Lambda \alpha = \sin \alpha$$

$$\Lambda \alpha = r k \pi + \alpha$$

$$\Lambda \alpha = r k \pi + \pi - \alpha$$

$$\frac{r k \pi + \pi}{\Lambda}$$

$$\frac{\sin \Lambda \alpha}{\sin \alpha} = \pm 1$$

بزرگترین دانه جابجایی

$$\frac{\Lambda \pi}{9}$$

$$\frac{9\pi}{V}$$

$$\frac{V\pi}{9}$$

$$\frac{0\pi}{V}$$

$$\tan(r\alpha) \tan(\alpha) = 1$$

$$\tan(r\alpha) = \cot(\alpha)$$

$$\tan(r\alpha) = \tan\left(\frac{\pi}{2} - \alpha\right)$$

$$r\alpha = k\pi + \frac{\pi}{2} - \alpha$$

$$r\alpha = k\pi + \frac{\pi}{2}$$

$$r\alpha = \frac{k\pi}{r} + \frac{\pi}{\Lambda}$$

$$\frac{9\pi}{\Lambda} \quad 1 \cdot \pi + 1$$

$$k = 1 \quad k = 0 \quad k = 4 \quad k = 5$$

$$\frac{9\pi}{\Lambda} \quad \frac{11\pi}{\Lambda} \quad \frac{13\pi}{\Lambda} \quad \frac{15\pi}{\Lambda}$$

$$\frac{r \Lambda \pi}{\Lambda} + \frac{r \cdot \pi}{\Lambda} = \frac{r \Lambda \pi}{\Lambda} = 9\pi$$

$$\cos \frac{x}{2} = 2 \cos^2 \frac{x}{4} - 1 \quad (\text{فرمول ضای})$$

② -

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

حاصل جمع دو عدد نامفهوم صفر است پس هر دو صفر بوده اند!

$$\sin^2 x = 0 \rightarrow \sin x = 0 \rightarrow x = k\pi \xrightarrow{-\pi \leq x \leq \pi} x = \pi \cup -\pi \cup 0$$

$$4 \cos^2 \frac{x}{2} = 0 \rightarrow \cos \frac{x}{2} = 0 \rightarrow \frac{x}{2} = k\pi + \frac{\pi}{2} \rightarrow x = \frac{2k\pi + \pi}{2}$$

$$\xrightarrow{-\pi \leq x \leq \pi} x = -\pi \cup -\frac{\pi}{2} \cup \frac{\pi}{2} \cup \pi$$

انتخاب دو مجموعه جواب  $[-\pi, \pi]$  است

$$\cos(x + \frac{\pi}{2}) = \frac{\sqrt{2}}{2} (\cos x - \sin x) = \frac{\sqrt{2}}{2} \rightarrow \cos x - \sin x = \frac{1}{2}$$

⑤

$$\cos x - \sin x = \frac{\sqrt{2}}{2} \xrightarrow{\text{مربع}} \frac{\sqrt{4}}{2} \rightarrow \cos x - \sin x = \frac{\sqrt{4}}{2}$$

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

$$m(\cos x - \sin x) = 4\sqrt{4}(\sin 2x) = \sqrt{4} \rightarrow \frac{\sqrt{4}}{2} m - 4\sqrt{4}(\frac{1}{2}) = \sqrt{4}$$

$$\frac{\sqrt{4}}{2} m - \sqrt{4} = \sqrt{4} \rightarrow \frac{m\sqrt{4}}{2} = 2\sqrt{4} \rightarrow m = 4$$

⑦ عبارت را از  $\frac{1}{2}$  ضرب میکنیم.

$$\frac{1}{2} \sin x + \frac{\sqrt{2}}{2} \cos x = \frac{\sqrt{2}}{2}$$

$$\cos 45^\circ \sin x + \sin 45^\circ \cos x = \frac{\sqrt{2}}{2} \rightarrow \sin(x + \frac{\pi}{4}) = \frac{\sqrt{2}}{2}$$

$$x + \frac{\pi}{4} = 2k\pi + \frac{\pi}{4} \rightarrow x = 2k\pi \xrightarrow{-\pi \leq x \leq \pi} k=0, 1 \rightarrow x = \frac{\pi}{12}, \frac{5\pi}{12}$$

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

$$S = \frac{5\pi}{12} - \frac{\pi}{12} + \frac{\pi}{2} = \frac{2\pi}{2} = \frac{\pi}{1}$$