

کامیابی چهره در از هم B

$$\cos^2 \alpha - \sin^2 \alpha = 3 \sin \alpha - 1 \quad (\text{الف})$$

$$\Rightarrow 1 - \sin^2 \alpha - 3 \sin \alpha = 3 \sin \alpha - 1$$

$$1 - 2 \sin^2 \alpha = 6 \sin \alpha - 1$$

$$2 \sin^2 \alpha + 3 \sin \alpha - 2 = 0$$

$$\sin^2 \alpha + 3 \sin \alpha - 2 = 0$$

$$(\sin \alpha + 2)(\sin \alpha - 1) = 0$$

$$\Rightarrow \sin \alpha = \frac{-2}{1} \quad \sin \alpha = \frac{1}{1}$$

$$\Rightarrow \sin \alpha = \frac{1}{1} \Rightarrow \alpha = \frac{\pi}{2}$$

$$\Rightarrow \alpha = 2k\pi + \frac{\pi}{2} \quad (1)$$

$$\alpha = 2k\pi + \pi - \frac{\pi}{2} \quad (2)$$

$$\cos^2 \alpha - \sin^2 \alpha + \cos \alpha - 2 = 0 \quad (1)$$

$$\cos^2 \alpha - (1 - \cos^2 \alpha) + \cos \alpha - 2 = 0$$

$$\cos^2 \alpha - 1 + \cos^2 \alpha + \cos \alpha - 2 = 0$$

$$2 \cos^2 \alpha + \cos \alpha - 3 = 0$$

$$\cos^2 \alpha + \cos \alpha - 3 = 0$$

$$(\cos \alpha + 3)(\cos \alpha - 1) = 0$$

$$\cos \alpha = \frac{3}{1} \quad \cos \alpha = \frac{1}{1} = 1$$

$$\Rightarrow \cos \alpha = 1$$

$$\Rightarrow \alpha = 2k\pi$$

$$(\sin^2 \alpha - \cos^2 \alpha)(\sin \alpha + \cos \alpha) = \sin \alpha \cos \alpha \quad (1)$$

$$(\sin \alpha - \cos \alpha)(\sin \alpha + \cos \alpha) = \sin \alpha \cos \alpha$$

$$\Rightarrow (\sin \alpha - \cos \alpha)(\sin \alpha + \cos \alpha) = 2 \sin \alpha \cos \alpha = (\sin \alpha \cos \alpha)(\cos^2 \alpha - \sin^2 \alpha) \quad (2)$$

$$(\sin \alpha - \cos \alpha)(\sin \alpha + \cos \alpha) = (\cos^2 \alpha - \sin^2 \alpha)(\sin \alpha + \cos \alpha)$$

(1)

-1

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

$$\Rightarrow \sin \alpha \cos \alpha = -\frac{1}{2} \Rightarrow \alpha = \frac{3\pi}{4}$$

$$\Rightarrow \alpha = 2k\pi - \frac{\pi}{4}$$

$$\Rightarrow -2(\sin \alpha \cos \alpha) = 1$$

$$\Rightarrow \alpha = k\pi - \frac{\pi}{4} \quad \checkmark$$

$$\alpha = 2k\pi + \frac{3\pi}{4} + \frac{\pi}{4} \Rightarrow \alpha = k\pi + \frac{\pi}{2} \quad \checkmark$$

$$\frac{2 \cos^2 \alpha}{\cos^2 \alpha} + \frac{2 \sin^2 \alpha \cos \alpha}{\cos^2 \alpha} = 1$$

$$\frac{2 \cos^2 \alpha}{\cos^2 \alpha}$$

$$2 + 2 \tan \alpha = \frac{1}{\cos^2 \alpha}$$

$$2(1 + \tan \alpha) = 1 + \tan^2 \alpha$$

$$2 = 1 - \tan \alpha$$

$$\Rightarrow 1 = -\tan \alpha \Rightarrow \tan \alpha = -1$$

$$\alpha = \frac{3\pi}{4}$$

$$\Rightarrow \alpha = k\pi - \frac{\pi}{4} \quad \checkmark$$

$$r \cos 2 + 1 = \frac{1}{\frac{\sin 2}{\cos 2}} = \frac{1}{\tan 2} \Rightarrow r \cos 2 + 1 = \frac{1}{\tan 2} \Rightarrow r \cos 2 + \tan 2 = 1 \quad (1)$$

$$r \cos 2 + \tan 2 - 1 = 0 \Rightarrow \cos 2 + \tan 2 - r = 0 \Rightarrow (\cos 2 + r)(\cos 2 - 1) = 0$$

$$\Rightarrow \left. \begin{aligned} \cos 2 &= -\frac{r}{1} = -1 \\ \cos 2 &= \frac{1}{r} = 1 \end{aligned} \right\} \Rightarrow \left. \begin{aligned} 2 &= r k \pi + \pi \\ 2 &= r k \pi + \frac{\pi}{r} \end{aligned} \right\} \quad (2)$$

$$r \sin^2 \alpha + \cos^2 \alpha - \sin \alpha \cos \alpha = r \quad \xrightarrow{+ \sin^2 \alpha} \quad r + \cot^2 \alpha - \cot \alpha = r(1 + \cot^2 \alpha)$$

$$r + \cot^2 \alpha - \cot \alpha = r + r \cot^2 \alpha$$

$$\cot \alpha (\cot \alpha - 1) = r \cot^2 \alpha \quad \Rightarrow \quad \cot \alpha - 1 = r \cot \alpha \quad \text{---} \quad \text{---}$$

$$\Rightarrow \left(2 = k\pi - \frac{\pi}{r} \right) \checkmark$$

$$\left(\cos\left(\frac{\pi}{r}\right) \cos 2 - \sin\frac{\pi}{r} \sin 2 \right) \left(\cos\frac{\pi}{2} \cos 2 + \sin\frac{\pi}{2} \sin 2 \right) \quad (3)$$

$$\Rightarrow = \left(\frac{\sqrt{r}}{r} \cos 2 \right)^2 - \left(\frac{\sqrt{r}}{r} \sin 2 \right)^2 \Rightarrow \frac{\cos^2 2 - \sin^2 2}{r} = \frac{1}{r}$$

$$\Rightarrow \left. \begin{aligned} \cos 2 &= \frac{1}{r} \Rightarrow 2 = r k \pi + \frac{\pi}{r} \Rightarrow 2 = k \pi + \frac{\pi}{r} \\ 2 &= r k \pi + \frac{\pi}{r} - \frac{\pi}{r} = k \pi + \frac{\pi}{r} \end{aligned} \right\} \checkmark$$

$$\frac{r \sin^2 \alpha \cos^2 \alpha}{\sin^2 \alpha} + \frac{\sin^2 \alpha}{\sin^2 \alpha} - \sin^2 \alpha = \cos^2 \alpha$$

(3)

$$r \cos^2 \alpha + 1 = \frac{r}{1} \Rightarrow r \cos^2 \alpha = 0 \quad \text{cos}^2 \alpha = 0$$

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

$$\frac{r}{r} = \alpha \Rightarrow \frac{\sin \alpha}{1 + \cos \alpha} = \frac{1 + \cos \alpha}{\sin \alpha} \Rightarrow \sin^2 \alpha = 1 + \cos^2 \alpha + r \cos \alpha$$

$$\Rightarrow 1 + \cos^2 \alpha + r \cos \alpha - 1 - \cos^2 \alpha = 0$$

$$\Rightarrow r \cos^2 \alpha + r \cos \alpha = 0 \Rightarrow r \cos \alpha (\cos \alpha + 1) = 0$$

$$\Rightarrow \cos \frac{r}{r} = -1 \Rightarrow \frac{r}{r} = r k\pi + \pi \quad \alpha = k\pi + \pi$$

$$\cos \frac{r}{r} = 0 \Rightarrow \frac{r}{r} = k\pi + \frac{\pi}{2} \quad \alpha = k\pi + \frac{\pi}{2}$$

$$\Rightarrow |r\pi - \pi| = \pi$$

$$\cos^2 \alpha - \sin^2 \alpha \cos^2 \alpha = 1 \Rightarrow -\sin^2 \alpha \cos^2 \alpha = \frac{r}{\sin^2 \alpha}$$

$$-\sin^2 \alpha \cos^2 \alpha = \frac{r}{\sin^2 \alpha} \Rightarrow -\cos^2 \alpha = 1 \Rightarrow \cos^2 \alpha = -1$$

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

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

اجزاء
جملہ

(1)

$$\sqrt{\sin^2 \theta + \cos^2 \theta} = \sqrt{r} (\cos \theta - \sin \theta) (\cos \theta + \sin \theta)$$

$$(\cos \theta + \sin \theta) = \sqrt{r} (\cos \theta - \sin \theta) (\cos \theta + \sin \theta)$$

$$1 = \sqrt{r} (\cos \theta - \sin \theta) \Rightarrow 1 = -\sqrt{r} \sqrt{r} \sin \left(\theta - \frac{\pi}{4} \right)$$

$$-\frac{1}{r} = \sin \left(\theta - \frac{\pi}{4} \right) \Rightarrow \theta = \frac{\pi}{4} + \pi$$

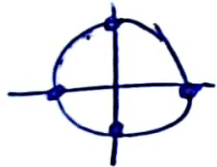
$$\Rightarrow \theta - \frac{\pi}{4} = k\pi - \frac{\pi}{r} \Rightarrow \theta = k\pi - \frac{\pi}{r} + \frac{\pi}{4}$$

$$\theta - \frac{\pi}{4} = k\pi + \frac{\pi}{r} \Rightarrow \theta = k\pi + \frac{\pi}{r} + \frac{\pi}{4}$$

$$\theta = k\pi + \frac{\pi}{r} \begin{cases} \theta = k\pi - \frac{\pi}{r} \\ \theta = k\pi + \frac{\pi}{r} \end{cases}$$

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

(C)



$$\Rightarrow \theta = k\pi + \frac{\pi}{r}$$

(1.)

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

(T)



$$\Rightarrow \theta = k\pi - \frac{\pi}{r}$$