Related Questions with Solutions

Questions

Quetion: 01

General solution of $\sin^4 x = 1 - \cos^4 x$

A. $\pi n/3, (n \in Z)$

B. $\pi n/4, (n \in Z)$

C.
$\pi n/2, (n \in Z)$

D. $\pi n, (n \in Z)$

Solutions

Solution: 01

$$\begin{array}{lll} \sin^{4} x+\cos^{4} x=1 & \Rightarrow & 1-2 \sin^{2} x \cos^{2} x=1 \\ \Rightarrow \frac{1}{2} \sin^{2} 2 x=0 & \Rightarrow & \sin^{2} 2 x=0 \\ \Rightarrow 2 x=n \pi & \Rightarrow & x=n \frac{\pi}{2} ; & n \in Z \end{array}$$

Correct Options

Answer:01

Correct Options: C