

Q P.T $\int_0^{n\pi+v} |\cos x| dx = 2n+2 - \sin v$ where $v \in \mathbb{Q}_2, n \in \mathbb{N}$.

Ans.

$$\int_0^{n\pi} |\cos x| dx + \int_{n\pi}^{n\pi+v} |\cos x| dx = \int_0^{n\pi} |\cos x| dx + \int_0^v |\cos x| dx$$
$$= 2n + 2 - \sin v$$