

57.  $\int_{-\frac{\pi}{4}}^{\frac{\pi}{4}} \frac{dx}{1 + \cos 2x}$  is equal to

(a) 1

(b) 2

(c) 3

(d) 4

Sol. (a)  $I = \int_{-\pi/4}^{\pi/4} \frac{dx}{1 + \cos 2x}$

$$= \int_{-\pi/4}^{\pi/4} \frac{dx}{2 \cos^2 x} = \frac{1}{2} \int_{-\pi/4}^{\pi/4} \sec^2 x dx = \int_0^{\pi/4} \sec^2 x = [\tan x]_0^{\pi/4} = 1$$