

Moment of Inertia of a uniform ring about an axis passing through centre and 30° inclined to the axis of

the ring is $\frac{n}{8}MR^2$. Then the value of n is

(7)

$$\text{M.I.} = \frac{MR^2}{2} (1 + \cos^2 \alpha)$$

When α is the angle of inclination of axis from axis of ring. So,

$$\text{M.I.} = \frac{MR^2}{2} (1 + \cos^2 \alpha) = \frac{MR^2}{2} \left(1 + \frac{3}{4} \right) = \frac{7}{8} MR^2.$$