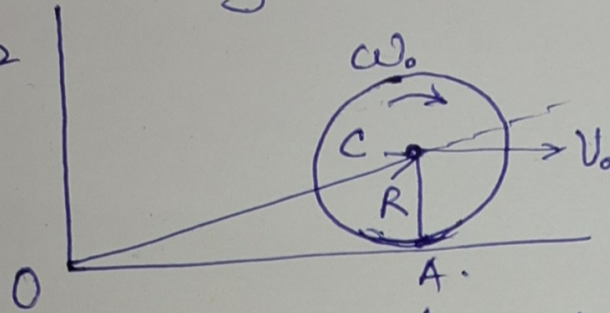


PYQ-JM-Rot Mech-01

1. A spherical shell of 1 kg mass and radius  $R$  is rolling with angular speed  $\omega$  on horizontal plane as shown in fig. The magnitude of angular momentum of the shell about the origin  $O$  is  $\frac{a}{3} R^2 \omega$ . The value of  $a$  will be  $\dots$ ?

(JEE Main 2022  
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2. The moment of Inertia of a uniform thin rod about perpendicular axis passing through one end is  $I_1$ . The same rod is bent into a ring and its moment of Inertia about a diameter is  $I_2$ . If  $\frac{I_1}{I_2}$  is  $\frac{\pi^2 x}{3}$  then value of  $x$  must be  $\dots$ ?

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