$I_z = 2I_x$

$MR^2 = 2I_x \Rightarrow \boxed{I_x = \frac{MR^2}{2}}$

Theorem of Perpendicular Axes:

The moment of inertia of a rigid plane lamina about any axis perpendicular to its plane and passing through it, is the sum of the moment of inertia of the same body about two mutually perpendicular axes lying in the plane of the lamina and intersecting one another at the same point through which the given perpendicular axis is passing.

statement of Theorem of perpendicular axes