

Rotational Motion

Physics

The rotational analogues of the linear quantities.

Linear quantity against its rotational analogue.

Linear	Rotational
Displacement s	Angle θ
Velocity v	Angular velocity ω
Acceleration a	Angular acceleration α
Mass m	Moment of inertia I
Force F	Torque τ
Momentum $p = mv$	Angular momentum $L = I\omega$
KE = $\frac{1}{2}mv^2$	KE = $\frac{1}{2}I\omega^2$
$F = ma$	$\tau = I\alpha$

Moment of inertia depends on how mass is distributed, not just how much there is. That is why a hoop and a disc differ.