Rotational Motion

$\tau_{net} = I\alpha$	$\tau = r F \sin\theta$	$\tau = r F$

Linear to Rotational Conversions

$x = r\theta$	$v = r\omega$	$a = r\alpha$

Rotational Kinematics

$\Delta\theta = \omega_i t + \frac{1}{2}\alpha t^2$	$\omega = \omega_i + \alpha t$	$\omega^2 = \omega_i^2 + 2\alpha\Delta\theta$

Rotational Momentum

$L = I\omega$	$K = \frac{1}{2}I\omega^2$	$\Delta L = \tau\Delta t$

Momentum (Linear)

When Momentum is Conversed:	$\sum p_i = \sum p_f$

$p = mv$	$\Delta p = F\Delta t$ or $J = F\Delta t$	$p_f = p_i + J$

Types of Collisions

Elastic Collision	KE conserved & momentum conserved	Bounce perfectly off each other
Inelastic Collision	KE lost & momentum conserved	Travel in same direction at different speeds
Perfectly Inelastic Collision	Greatest KE lost & momentum conserved	Objects coupled and travel in same direction