I. center of mass, rigid body and moment of inertia.

II. rotational motion, the angular momentum and its conservation;

III. Rotational kinetic energy

# 9 LINEAR MOMENTUM AND COLLISIONS

**Linear momentum**: the linear momentum of p→ of a particle or an object that can be model as a particle of mass *m* moving with velocity v→ is defined to be the product of the mass and velocity of the particle

p→ = mv→

When two or more particles in an isolated system interact, the total momentum of the system does not change. The total momentum of an isolated system at all times equals its initial momentum

**Impulse-momentum theorem**: The change in the momentum of a particle is equal to the impulse of the net force acting on the particle:

Δp→ = I→

finire 243