

9 Lecture - PHY101

Important Subjective

What is meant by an elastic collision?

Answer: An elastic collision is one in which both kinetic energy and momentum are conserved.

What is the difference between an elastic and inelastic collision?

Answer: In an elastic collision, both momentum and kinetic energy are conserved, whereas in an inelastic collision, only momentum is conserved.

What is the law of conservation of momentum?

Answer: The law of conservation of momentum states that the total momentum of a system of objects is conserved if there are no external forces acting on the system.

What happens to the total momentum of a system of objects during a collision?

Answer: The total momentum of a system of objects is conserved during a collision.

What is the difference between a head-on collision and a rear-end collision?

Answer: In a head-on collision, two objects collide with each other while moving in opposite directions, whereas, in a rear-end collision, one object collides with another object from behind.

Can kinetic energy be conserved during an inelastic collision?

Answer: No, kinetic energy is not conserved during an inelastic collision.

What is the difference between a perfectly inelastic collision and a partially inelastic collision?

Answer: In a perfectly inelastic collision, the objects stick together after the collision, whereas in a partially inelastic collision, the objects do not stick together but some kinetic energy is lost.

What is the difference between a one-dimensional collision and a two-dimensional collision?

Answer: In a one-dimensional collision, the objects collide along a straight line, whereas in a two-dimensional collision, the objects collide in a plane.

What is the difference between a center of mass and a reference frame?

Answer: A center of mass is the point at which the mass of an object is concentrated, whereas a reference frame is a coordinate system used to describe the motion of an object.

Can momentum be conserved in a system with external forces acting on it?

Answer: No, momentum cannot be conserved in a system with external forces acting on it, as the external forces will cause a change in momentum.