Key Terms

angular momentum the product of the moment of inertia and angular velocity

change in momentum the difference between the final and initial values of momentum; the mass times the change in velocity

elastic collision collision in which objects separate after impact and kinetic energy is conserved

impulse average net external force multiplied by the time the force acts; equal to the change in momentum

impulse–momentum theorem the impulse, or change in momentum, is the product of the net external force and the time over which the force acts

inelastic collision collision in which objects stick together after impact and kinetic energy is not conserved

isolated system system in which the net external force is zero

law of conservation of momentum when the net external force is zero, the total momentum of the system is conserved or constant

linear momentum the product of a system's mass and velocity

point masses structureless particles that cannot rotate or spin

recoil backward movement of an object caused by the transfer of momentum from another object in a collision