1. A 120 kg bighorn sheep and a 150 kg bighorn sheep are fighting on a horizontal muddy surface. The two sheep collide at right angles and slide as one through the mud. The coefficient of kinetic friction between their hooves and the ground is 0.15. If the sheep come to rest at a point 5.5 m from where they collided at an angle of 20 degrees from the heavier sheep’s original direction of motion, how fast was each sheep travelling?
2. A 8 kg ball is hanging from the ceiling by a light string 120 cm long. If the ball is struck by a 2 kg ball moving 7 m/s at an angle 60 degrees above the horizontal in an elastic collision, find the tension of the wire just after the collision.