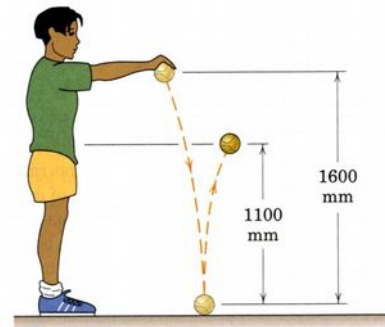


# Impulse & Momentum – 2 – Tutorial

---

1. Particle **A** is travelling at 2.0 m/s.  
Particle **B** is travelling in the opposite direction at a speed of 1.0 m/s.  
After the particles collide, **A** is brought to rest.  
The coefficient of restitution between the particles is 0.5.  
Calculate the speed of **B** after the collision. (*1.5m/s*)

2. Tennis balls are usually rejected if they fail to rebound to waist level when dropped from shoulder level.  
If a ball just passes the test shown, calculate:  
(a) the coefficient of restitution,  $e$ , (*0.83*)  
(b) the percentage of the original energy lost during the impact. (*31%*)



3. The tennis ball in the diagram has a coefficient of restitution of 0.8 during impact with the court surface. Calculate the velocity with which the ball must be thrown downward from the 1600mm shoulder level if it is return to the same level after bouncing once on the court surface. (*4.2 m/s*)