

- 12 Two spheres approach each other along the same straight line. Their speeds are  $u_1$  and  $u_2$  before collision. After the collision, the spheres separate with speeds  $v_1$  and  $v_2$  in the directions shown below.



Which equation must be correct if the collision is perfectly elastic?

- A  $u_1 - u_2 = v_2 + v_1$
- B  $u_1 - u_2 = v_2 - v_1$
- C  $u_1 + u_2 = v_2 + v_1$
- D  $u_1 + u_2 = v_2 - v_1$

- 13 A box of mass 8.0 kg rests on a horizontal, rough surface. A string attached to the box passes