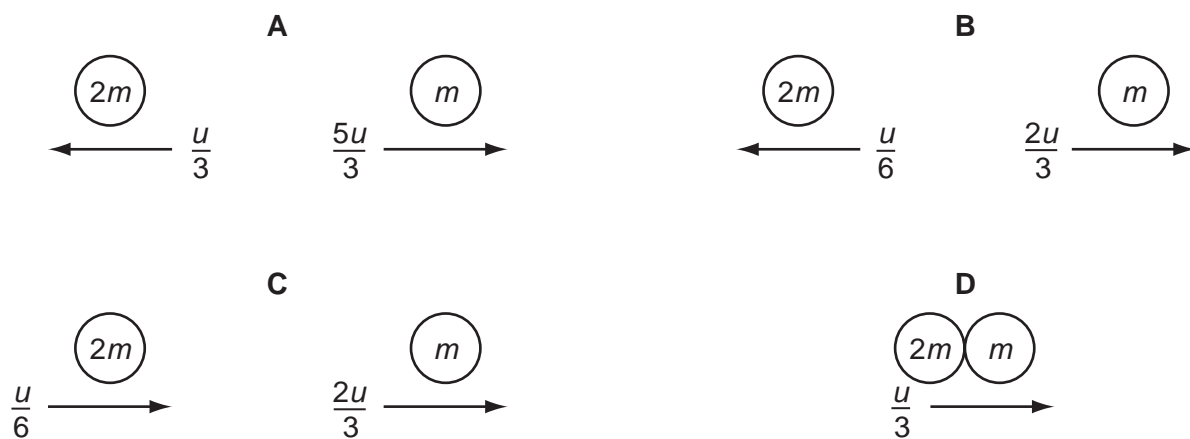


- 9 The diagram shows two spherical masses approaching each other head-on at an equal speed. One has mass  $2m$  and the other has mass  $m$ .



Which diagram, showing the situation after the collision, shows the result of an elastic collision?



the spheres stick together

- 10 A supermarket trolley, total mass  $30\text{ kg}$ , is moving at  $3.0\text{ m s}^{-1}$ . A retarding force of  $60\text{ N}$  is applied to the trolley for  $0.50\text{ s}$  in the opposite direction to the trolley's initial velocity.

What is the trolley's new velocity after the application of the force?

- A**  $1.0\text{ m s}^{-1}$       **B**  $1.5\text{ m s}^{-1}$       **C**  $2.0\text{ m s}^{-1}$       **D**  $2.8\text{ m s}^{-1}$

**Space for working**