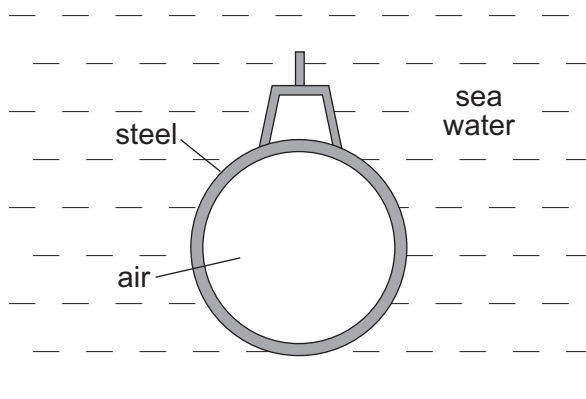10 A ball of mass *m*, moving at a velocity *v*, collides with a stationary ball of mass 2*m*.

The two balls stick together.

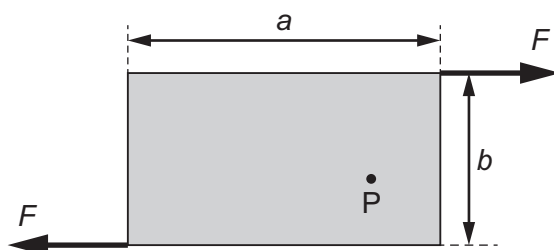Which fraction of the initial kinetic energy is lost on impact?

A $\dfrac{1}{9}$ 　　　 B $\dfrac{1}{3}$ 　　　 C $\dfrac{2}{3}$ 　　　 D $\dfrac{8}{9}$

11 A submarine is in equilibrium in a fully submerged position.

What causes the upthrust on the submarine?

A The air in the submarine is less dense than sea water.

B There is a difference in water pressure acting on the top and on the bottom of the submarine.

C The sea water exerts a greater upward force on the submarine than the weight of the steel.

D The submarine displaces its own volume of sea water.

12 Two forces, each of magnitude *F*, act along the edges of a rectangular metal plate, as shown.

The plate has length *a* and width *b*.

What is the torque about point P?

A *Fa* 　　　 B *Fb* 　　　 C 2*Fa* 　　　 D 2*Fb*