

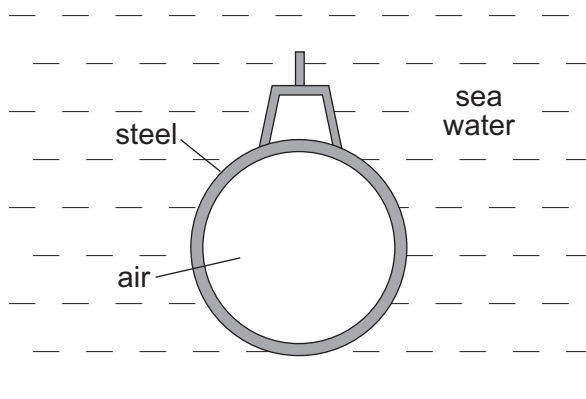
- 10 A ball of mass m , moving at a velocity v , collides with a stationary ball of mass $2m$.

The two balls stick together.

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

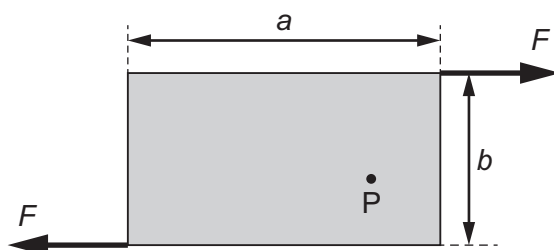
- A $\frac{1}{9}$ B $\frac{1}{3}$ C $\frac{2}{3}$ D $\frac{8}{9}$

- 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 $2Fa$ D $2Fb$