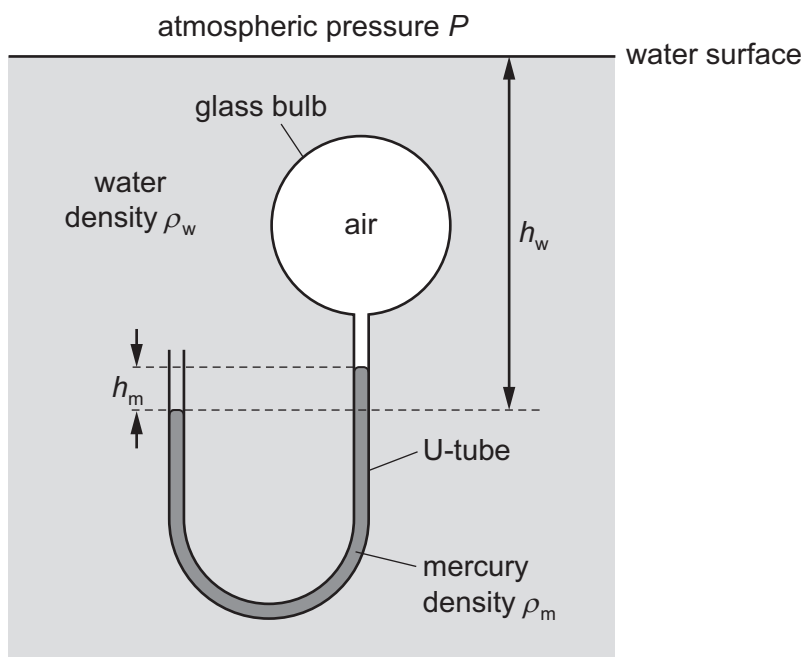


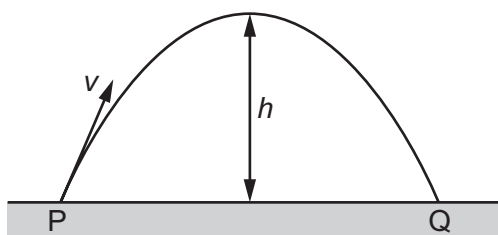
- 15 Air is trapped inside a glass bulb which is immersed in water and attached to a U-tube containing mercury. The densities of water and mercury are ρ_w and ρ_m respectively. The surface of the water is open to the atmosphere where atmospheric pressure is P .



The acceleration of free fall is g .

What is the pressure of the air in the glass bulb?

- A $P + g\rho_w h_w + g\rho_m h_m$
 B $P + g\rho_w h_w - g\rho_m h_m$
 C $g\rho_w h_w + g\rho_m h_m$
 D $g\rho_w h_w - g\rho_m h_m$
- 16 A ball of mass m is thrown up to height h in air with an initial velocity v , as shown.



Air resistance is negligible. The acceleration of free fall is g .

What is the **total** work done by the gravitational force on the ball during its flight from P to Q?

- A zero B $\frac{1}{2}mv^2$ C mgh D $2mgh$