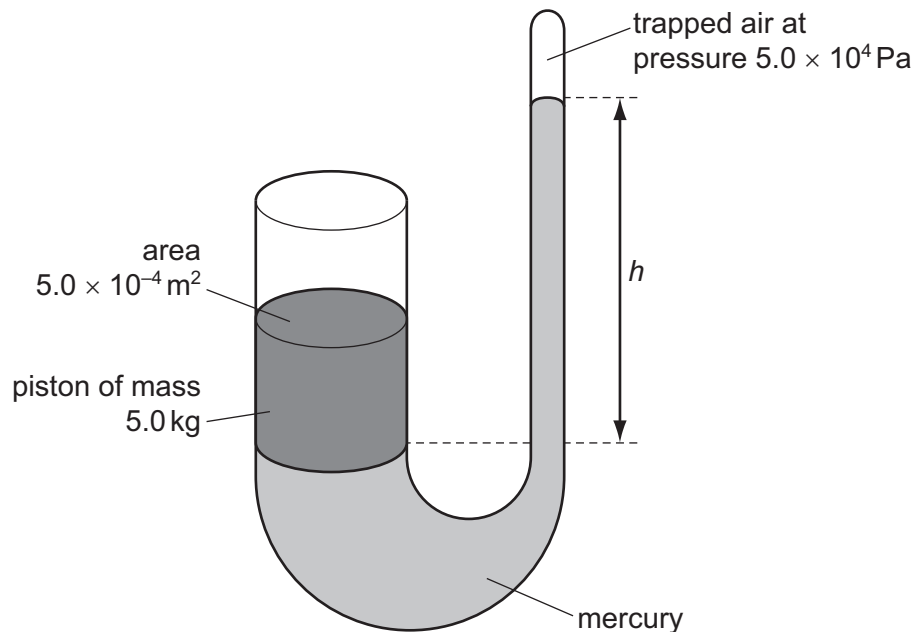


- 19 A U-tube closed at one end contains mercury. Air at a pressure of $5.0 \times 10^4 \text{ Pa}$ is trapped at the closed end. The other end is open to the atmosphere and is fitted with a piston of mass 5.0 kg and cross-sectional area $5.0 \times 10^{-4} \text{ m}^2$.

The density of mercury is 13600 kg m^{-3} and atmospheric pressure is $1.01 \times 10^5 \text{ Pa}$.



What is the height h of the mercury column?

- A** 37 cm **B** 44 cm **C** 74 cm **D** 110 cm

- 20 A known tensile force acts on a wire. The wire does not exceed its elastic limit.