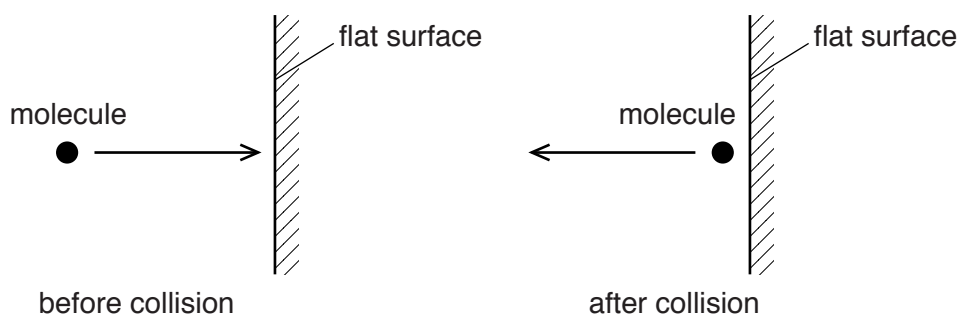


- 4 (a) A gas molecule has a mass of  $6.64 \times 10^{-27} \text{ kg}$  and a speed of  $1250 \text{ ms}^{-1}$ . The molecule collides normally with a flat surface and rebounds with the same speed, as shown in Fig. 4.1.



**Fig. 4.1**

Calculate the change in momentum of the molecule.

change in momentum = ..... Ns [2]

- (b) (i) Use the kinetic model to explain the pressure exerted by gases.

.....  
 .....  
 .....  
 .....  
 .....  
 ..... [3]

- (ii) Explain the effect of an increase in density, at constant temperature, on the pressure of a gas.

.....  
 ..... [1]