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

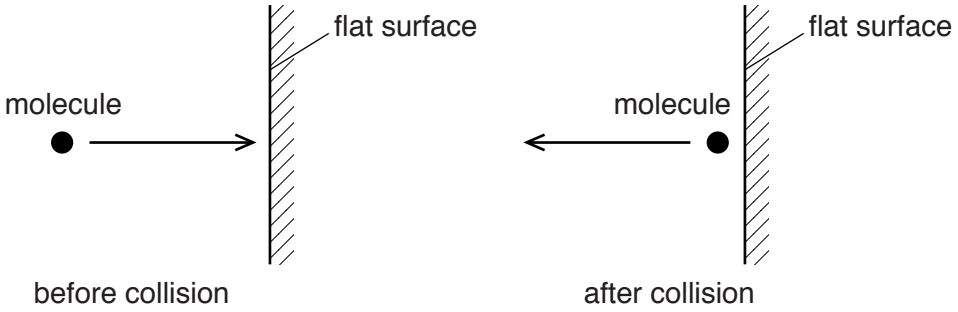

Fig. 4.1

Calculate the change in momentum of the molecule.

change in momentum = ... N s [2]

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

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.....

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.....

..... [3]

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

.....

..... [1]