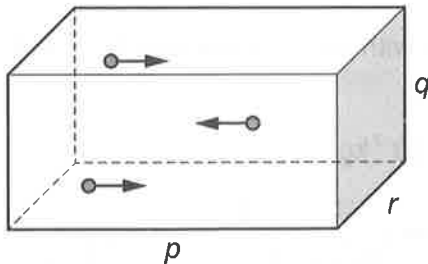


- 10 A box has dimensions  $p$ ,  $q$  and  $r$ . The box contains  $N$  molecules, each of mass  $m$ , of an ideal gas.

In a simple model, all the molecules are moving at speed  $v$  perpendicular to the shaded wall.



What is the average force exerted on the shaded wall of the box by  $N$  molecules?

- A**  $\frac{mNv^2}{p}$       **B**  $\frac{mNv^2}{2p}$       **C**  $\frac{mNv^2}{3p}$       **D**  $\frac{mNv^2}{pqr}$

- 11 A cylinder contains an ideal gas of internal energy  $U$  at  $0^\circ\text{C}$ . The gas is heated to  $273^\circ\text{C}$ .