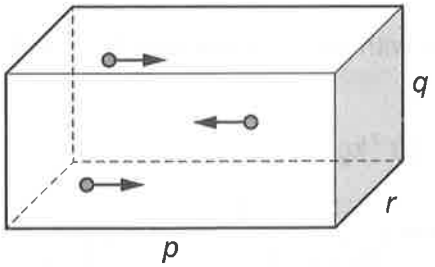
10 A box has dimensions p, q and r. The box contains N molecules, each of mass m, of an ideal gas.

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** $\frac{mNv^2}{pqr}$