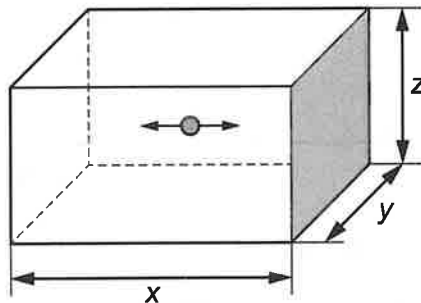12 A single particle of an ideal gas has mass m. It is contained in a box with side lengths x, y and z.

The particle moves backwards and forwards with speed v in a direction perpendicular to the shaded side.

Which expression gives the average force exerted on the shaded side of the box?

A $\dfrac{mv^2}{x}$ 　　　B $\dfrac{mv^2}{2x}$ 　　　C $\dfrac{2mv}{yz}$ 　　　D $\dfrac{mv^2x}{yz}$