

- 12** A molecule of mass  $m$  travelling at speed  $v$  hits a wall in a direction perpendicular to the wall. The collision is elastic.

What are the changes in the kinetic energy and in the momentum of the molecule caused by the collision?

	change in momentum	change in kinetic energy
<b>A</b>	0	0
<b>B</b>	0	$mv^2$
<b>C</b>	$2mv$	0
<b>D</b>	$mv^2$	0

- 13** The IKAROS satellite has mass 330 kg and moves through space using a solar sail of area  $20 \text{ m}^2$