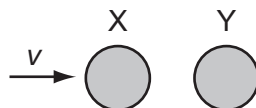**12** A particle X has speed *v* and collides with a stationary identical particle Y. The collision is perfectly elastic.

What are the speed and direction of motion of each of the two particles after the collision?

	X	Y
A	stationary	*v* to the right
B	$\frac{v}{2}$ to the right	$\frac{v}{2}$ to the right
C	$\frac{v}{2}$ to the left	$\frac{v}{2}$ to the right
D	*v* to the left	stationary

Space for working