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

$$\stackrel{\mathsf{V}}{\longrightarrow} \stackrel{\mathsf{X}}{\bigcirc} \stackrel{\mathsf{Y}}{\bigcirc}$$

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

	Х	Υ
Α	stationary	v to the right
В	$\frac{v}{2}$ to the right	$\frac{v}{2}$ to the right
С	$\frac{V}{2}$ to the left	$\frac{v}{2}$ to the right
D	v to the left	stationary

## Space for working