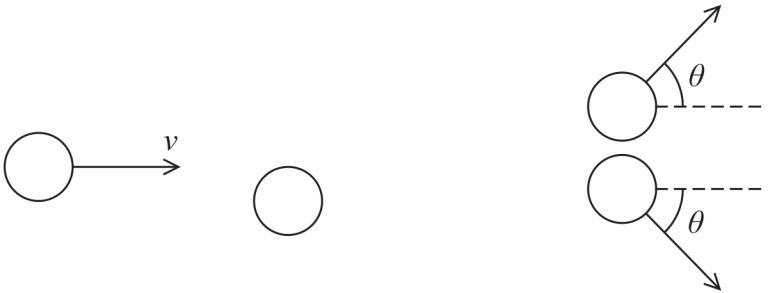
7 A sphere travelling at speed v collides elastically with an identical sphere which is at rest.

After the collision, both spheres move off at an angle θ to the direction of travel of the first sphere, as shown. The spheres have the same speed as each other.



Before collision

After collision

What is the speed of the spheres after the collision?

☒ **A** v

☒ **B** $\frac{v}{\sqrt{2}}$

☒ **C** $\frac{v}{2}$

☒ **D** $\frac{v}{4}$

(Total for Question 7 = 1 mark)