8 A snowflake is falling from the sky on a still day. Its weight acts vertically downwards and air resistance acts vertically upwards. As the snowflake falls, air resistance increases until it is equal to the weight and there is no resultant force acting on the snowflake.

When the forces become equal, which statement is correct?

A The snowflake accelerates.

B The snowflake decelerates.

C The snowflake is stationary.

D The snowflake moves at a constant velocity.

9 Two objects X and Y in an isolated system undergo a perfectly elastic collision. The velocities of the objects before and after the collision are shown.

What is the speed v of Y after the collision?

A $2.0\,m\,s^{-1}$ **B** $18\,m\,s^{-1}$ **C** $22\,m\,s^{-1}$ **D** $24\,m\,s^{-1}$