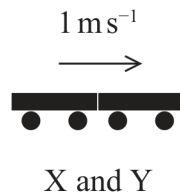**Questions 3 and 4 refer to a collision between two trolleys.**

The diagram shows the momentum of two trolleys, X and Y, before a collision. The mass of each trolley is 0.25 kg.

$0.5\,N\,s$ $\qquad\qquad$ $0\,N\,s$

X $\qquad\qquad\qquad$ Y

The two trolleys join together after the collision and move on with a velocity of $1\,m\,s^{-1}$.

$1\,m\,s^{-1}$

X and Y

3 Which of the following is the kinetic energy of trolley X before the collision?

☒ **A** 0.5 J

☒ **B** 1 J

☒ **C** 2 J

☒ **D** 4 J

(Total for Question 3 = 1 mark)