4 A particle X, with kinetic energy E_k, collides with a stationary particle Y. Both particles have the same mass. After colliding, X and Y travel together as a single larger particle.

How much kinetic energy is lost in the collision?

A 0

B $\dfrac{E_k}{4}$

C $\dfrac{E_k}{2}$

D $\dfrac{3E_k}{4}$