

- 9 An elastic collision occurs between two bodies X and Y. The mass of body X is  $m$  and the mass of body Y is  $4m$ . Body X travels at speed  $v$  before the collision and speed  $\frac{3v}{5}$  in the opposite direction after the collision. Body Y is stationary before the collision.



What is the kinetic energy of body Y after the collision?

A  $\frac{8}{10}mv^2$

B  $\frac{34}{50}mv^2$

C  $\frac{16}{50}mv^2$

D  $\frac{1}{5}mv^2$