17 The diagram shows a particle X, with kinetic energy E_k, about to collide with a stationary particle Y. Both particles have the same mass.

After colliding, X and Y travel onwards together as a single larger particle.

How much kinetic energy is lost in the collision?

A 0 **B** $\frac{E_k}{4}$ **C** $\frac{E_k}{2}$ **D** $\frac{3E_k}{4}$

18 An electric motor is required to produce 120 W of mechanical output power. The efficiency of the motor is 80 %.

Which row is correct?

	electrical power input to motor / W	waste heat output from motor / W
A	120	24
B	120	96
C	150	30
D	150	120

Space for working