

9 A person, travelling on a motorway a total distance of 200 km, travels the first 90 km at an average speed of  $80 \text{ km h}^{-1}$ .

Which average speed must be obtained for the rest of the journey if the person is to reach the destination in a total time of 2 hours 0 minutes?

- A  $110 \text{ km h}^{-1}$
- B  $120 \text{ km h}^{-1}$
- C  $122 \text{ km h}^{-1}$
- D  $126 \text{ km h}^{-1}$

10 A moving thorium nucleus  $^{230}\text{Th}$  spontaneously emits an  $\alpha$  particle. The nucleus formed is a