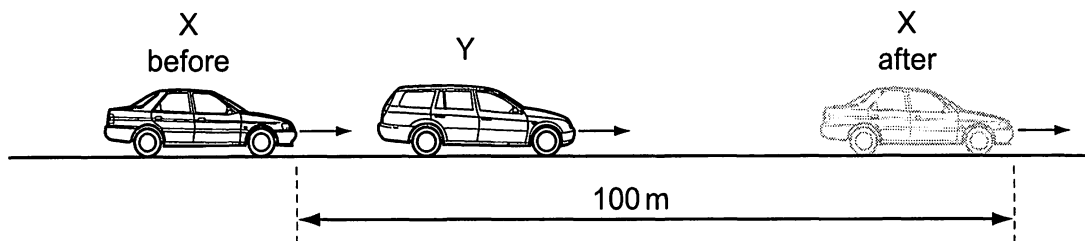


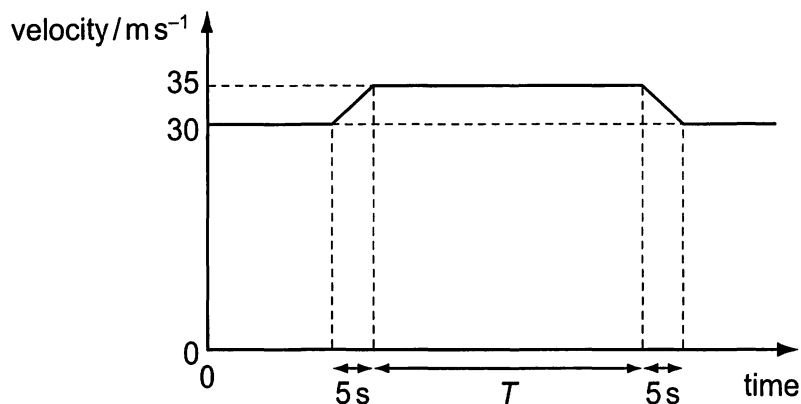
5 Two cars X and Y are initially travelling at  $30 \text{ m s}^{-1}$  on a straight motorway.

X overtakes Y by accelerating for  $5 \text{ s}$  to  $35 \text{ m s}^{-1}$ , remaining at  $35 \text{ m s}^{-1}$  for a time  $T$  and then decelerating for  $5 \text{ s}$  to  $30 \text{ m s}^{-1}$ .

X advances by  $100 \text{ m}$  relative to Y during overtaking.



The diagram shows the velocity-time graph for X.



What is time  $T$ ?

A  $10 \text{ s}$

B  $15 \text{ s}$

C  $20 \text{ s}$

D  $25 \text{ s}$