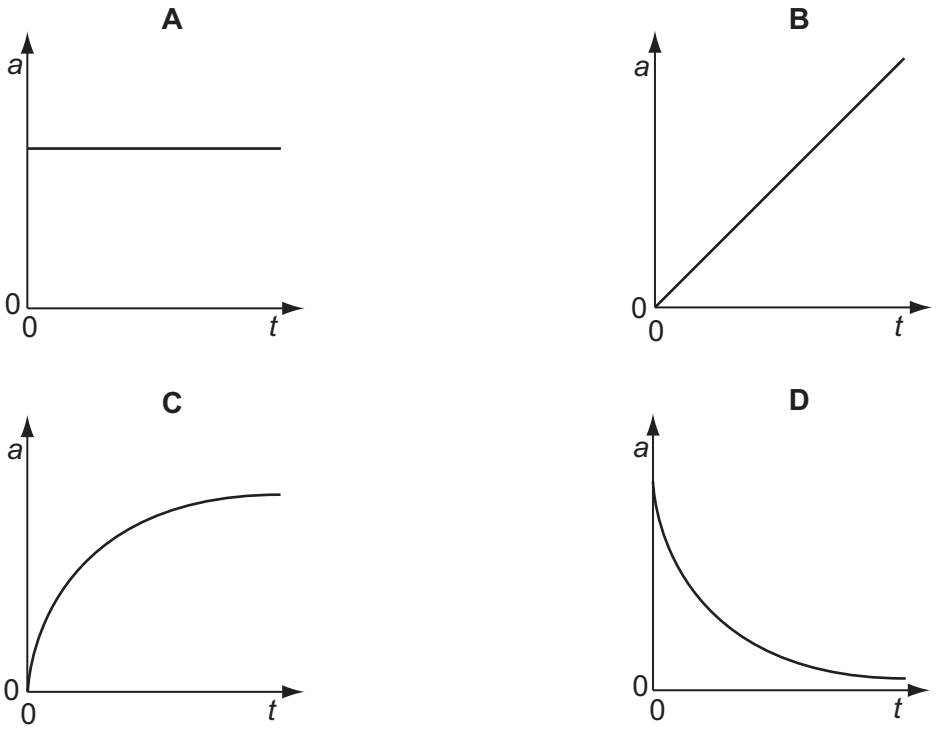
7 A car is travelling with uniform acceleration along a straight road. The road has marker posts every 100 m. When the car passes one post, it has a speed of $10\,m\,s^{-1}$ and, when it passes the next one, its speed is $20\,m\,s^{-1}$.

What is the car's acceleration?

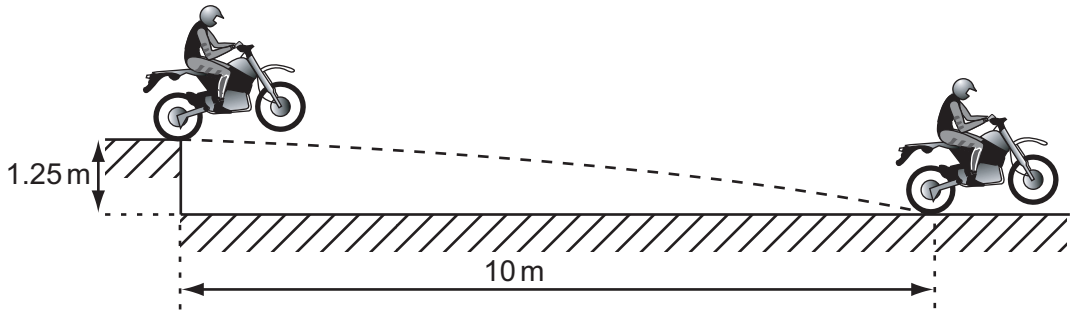
A $0.67\,m\,s^{-2}$ **B** $1.5\,m\,s^{-2}$ **C** $2.5\,m\,s^{-2}$ **D** $6.0\,m\,s^{-2}$

8 A tennis ball is released from rest at the top of a tall building.

Which graph best represents the variation with time t of the acceleration a of the ball as it falls, assuming that the effects of air resistance are appreciable?



9 A motorcycle stunt-rider moving horizontally takes off from a point 1.25 m above the ground, landing 10 m away as shown.



What was the speed at take-off?

A $5\,m\,s^{-1}$ **B** $10\,m\,s^{-1}$ **C** $15\,m\,s^{-1}$ **D** $20\,m\,s^{-1}$