

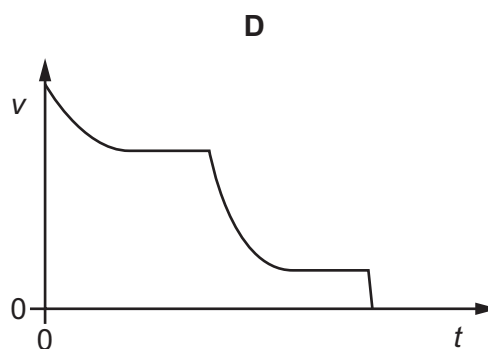
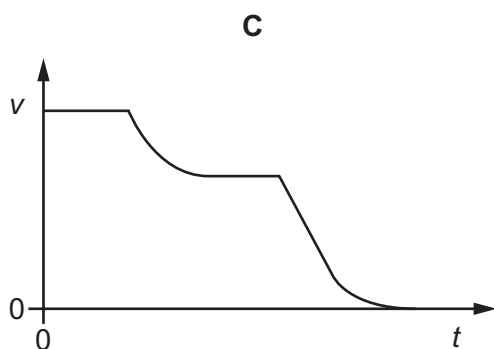
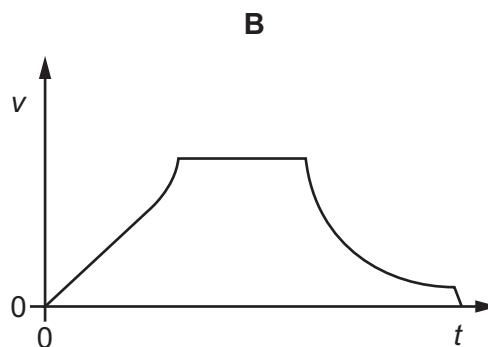
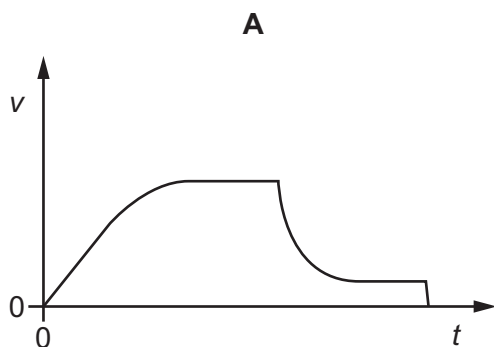
- 8 A mass is placed on a frictionless slope inclined at  $30^\circ$  to the horizontal. The mass is then released.

What is its acceleration down the slope?

- A  $4.9 \text{ ms}^{-2}$       B  $5.7 \text{ ms}^{-2}$       C  $8.5 \text{ ms}^{-2}$       D  $9.8 \text{ ms}^{-2}$

- 9 A parachutist falls vertically from rest at time  $t = 0$  from a hot-air balloon. She falls for some distance before opening her parachute.

Which graph best shows the variation with time  $t$  of the speed  $v$  of the parachutist?



- 10 A ship of mass  $8.4 \times 10^7 \text{ kg}$  is approaching a harbour with speed  $16.4 \text{ ms}^{-1}$ . By using reverse thrust it can maintain a constant total stopping force of  $920\,000 \text{ N}$ .

How long will it take to stop?

- A 15 seconds  
B 150 seconds  
C 25 minutes  
D 250 minutes