

- 2 A skydiver of mass of 60 kg falls through the air from rest. Fig. 2.1 shows the variation with time  $t$  of velocity  $v$  from  $t = 0$  to  $t = 30$  s.

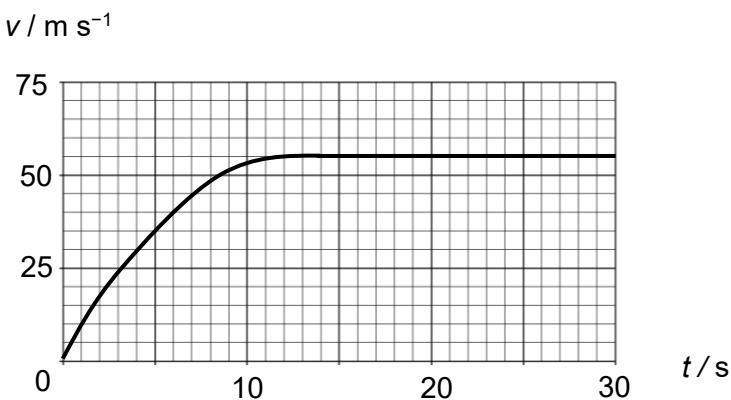


Fig. 2.1

- (a) Calculate the change in kinetic energy of the skydiver between  $t = 0$  and  $t = 30$  s.

$$\text{change in kinetic energy} = \dots \text{J} \quad [2]$$

- (b) Using Fig. 2.1, estimate the distance fallen by the skydiver between  $t = 0$  and  $t = 30$  s.  
Express your answer to 2 significant figures.

$$\text{distance fallen} = \dots \text{m} \quad [2]$$

- (c) Calculate the loss in gravitational potential energy between  $t = 0$  and  $t = 30$  s.

loss in gravitational potential energy = ..... J [2]

- (d) Calculate the magnitude of the work done by resistive force on the object between  $t = 0$  and  $t = 30$  s.

work done = ..... J [2]