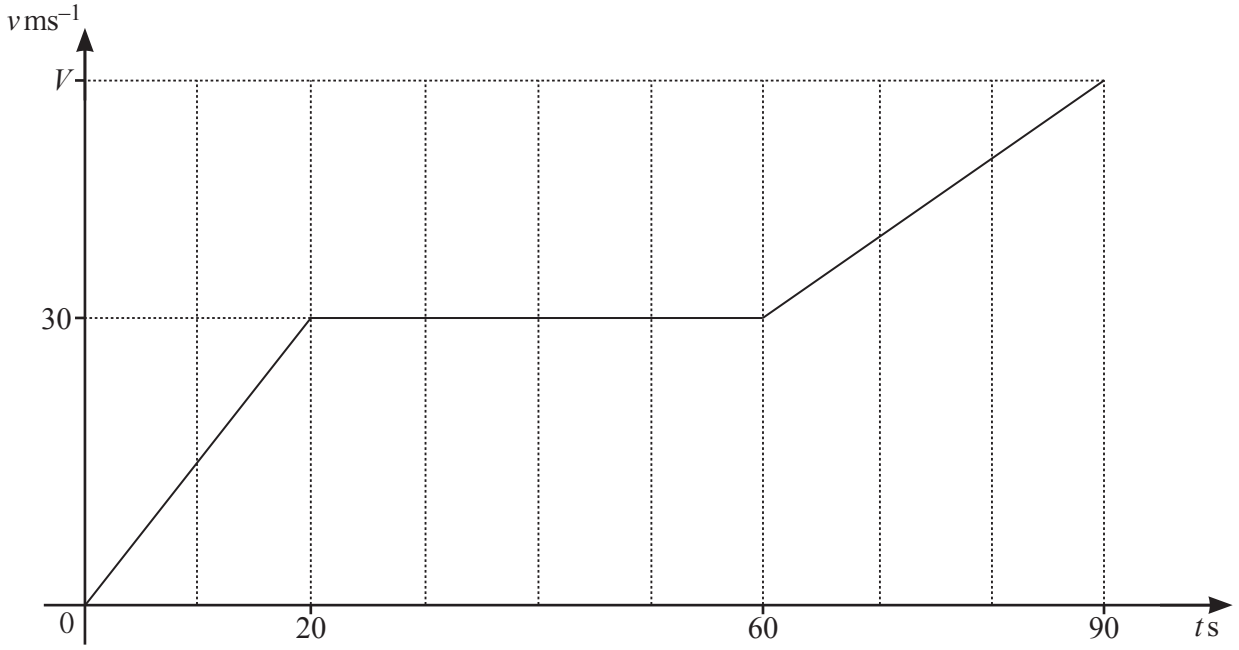
12 (a)



The diagram shows the velocity–time graph of a particle P that travels 2775 m in 90 s, reaching a final velocity of V ms^{-1}.

(i) Find the value of V. [3]

(ii) Write down the acceleration of P when $t = 40$. [1]

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(b) The acceleration, a ms^{-2}, of a particle Q travelling in a straight line, is given by $a = 6\cos 2t$ at time t s. When $t = 0$ the particle is at point O and is travelling with a velocity of $10\,\text{ms}^{-1}$.

(i) Find the velocity of Q at time t. [3]

(ii) Find the displacement of Q from O at time t. [3]

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