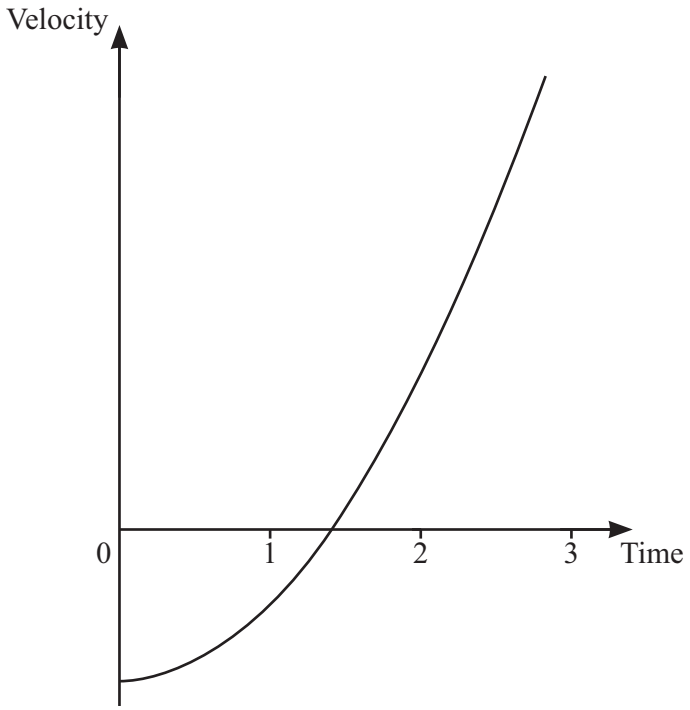
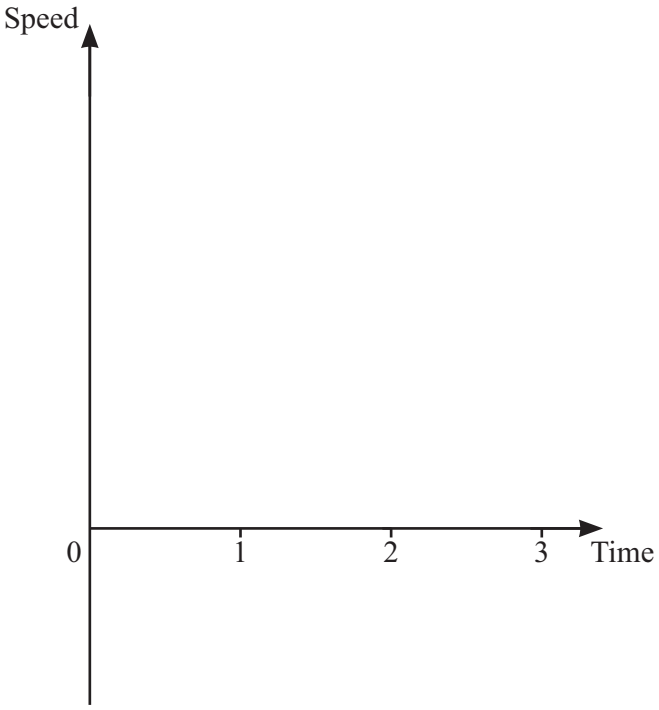
9 The diagram shows the velocity–time graph for a particle moving in a straight line.



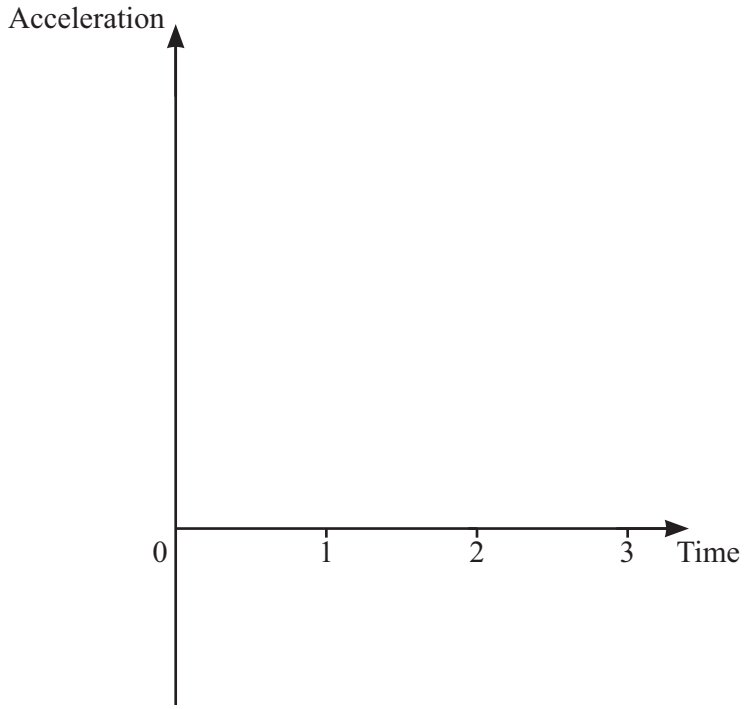
(a) On the diagram below, sketch the speed–time graph for the motion of this particle. [1]



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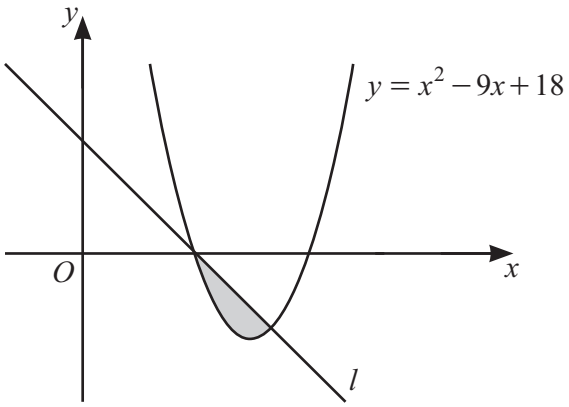
It is given that the velocity–time graph is part of a quadratic curve.
The curve has gradient 0 when time is 0.

(b) On the diagram below sketch a possible acceleration–time graph for the motion of the particle. [2]



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10



The diagram shows the curve $y = x^2 - 9x + 18$ and the line l, which is the normal to this curve at the point where $x = 5$.

Find the area of the shaded region. [11]

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