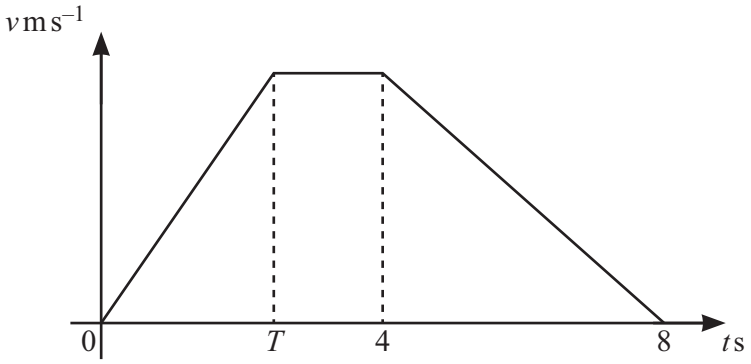
4



The velocity–time graph represents the motion of a particle moving in a straight line.
The acceleration during the first T seconds of the motion is $2\,\text{m s}^{-2}$.
The total distance travelled is 27 m.

(a) Calculate T. [4]

(b) Calculate the acceleration during the last 4 seconds of the motion. [2]

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN

5 The normal to the curve $y = x^3 + \frac{3}{2}x^2 - 2x + 1$ at the point where $x = 0$ cuts the curve again at two other points.

Find the x-coordinates of these two points. [8]

DO NOT WRITE IN THIS MARGIN