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| **Topic 5: Calculus** | **Kinematics** |
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| A particle moves in a straight line. The velocity, , of the particle at time seconds is given by .The following diagram shows the graph of .(a) Find the smallest value of for which the particle is at rest.(b) Find the total distance travelled by the particle.(c) Find the acceleration of the particle when . | [2 marks][2 marks][2 marks] |
| Mark scheme:(a) Setting    **Note:** Do not award **A1** if multiple times are given.(b)    (c) Finding  Acceleration = 2.63666… =  | (M1) A1 [2 marks] A1  A1[2 marks] (M1) A1 [2 marks] |
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