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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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