

- 7 A particle  $P$  moves in a straight line so that, at time  $t$  seconds ( $t \geq 0$ ), its velocity,  $v$  m/s, is given by  $v = 3t^2 - 4t + 7$

Find

- (a) the acceleration of  $P$  at time  $t = 2$  (2)

- (b) the minimum speed of  $P$ . (3)

When  $t = 0$ ,  $P$  is at the point  $A$  and has velocity  $V$  m/s.

- (c) Write down the value of  $V$ . (1)

When  $P$  reaches the point  $B$ , the velocity of  $P$  is also  $V$  m/s.

- (d) Find the distance  $AB$ . (6)

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**(Total for Question 7 is 12 marks)**

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