

4 A particle P is moving along the x -axis.

At time t seconds ($t \geq 0$) the velocity, v m/s, of P is given by $v = 4t^2 - 19t + 12$

(a) Find the values of t for which P is instantaneously at rest.

(2)

When $t = 0$, the displacement of P from the origin is -4 m.

(b) Find the displacement of P from the origin when $t = 6$

(4)

At time t seconds the acceleration of P is a m/s².

(c) Find the value of t when $a = 0$

(3)

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Question 4 continued

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(Total for Question 4 is 9 marks)