

- 4 A particle P moves along the x -axis. At time t seconds ($t \geq 0$) the acceleration, $a \text{ m/s}^2$, of P is given by $a = 6t - 12$

When $t = 0$, P is at rest at the origin.

- (a) Find the velocity of P when $t = 2$

(3)

At time T seconds, $T > 0$, P is instantaneously at rest.

- (b) Find the value of T .

(2)

- (c) Find the distance travelled by P in the first 8 seconds of its motion.

(3)

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Question 4 continued

Handwriting practice area with horizontal dotted lines.

(Total for Question 4 is 8 marks)

