

- 6 A particle P is moving in a straight line. The displacement s of P , in metres, at time t seconds, $t \geq 0$, is given by

$$s = e^{2t} \sin 3t + 2$$

At time $t = 0$, P is at the point A and at time $t = \frac{\pi}{6}$, P is at the point B

- (a) Find the exact distance AB

(2)

- (b) Find the exact velocity of P when $t = \frac{\pi}{3}$

(4)

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Question 6 continued

Handwriting practice area with horizontal dotted lines.

(Total for Question 6 is 6 marks)



P 7 4 0 9 9 A 0 1 5 3 2