

DO NOT WRITE IN THIS AREA

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Answer all ELEVEN questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1** A particle P is moving along a straight line that passes through the fixed point O .
At time t seconds, $t \geq 0$, the displacement, s metres, of P from O is given by

$$s = t^3 + 4t^2 - 27t + 4$$

Find the value of t at the instant when the velocity of P is 8 m/s.

(4)

(Total for Question 1 is 4 marks)



P 5 9 9 3 9 A 0 3 3 6