

- 2 A particle  $P$  moves along the  $x$ -axis. At time  $t$  seconds, the displacement,  $x$  metres, of  $P$  from the origin  $O$  is given by

$$x = t^4 - 13.5t + 12$$

- (a) Find the velocity, in m/s, of  $P$  when  $t = 3$  (2)
- (b) Find the value of  $t$  for which  $P$  is instantaneously at rest. (2)
- (c) Find the acceleration, in  $\text{m/s}^2$ , of  $P$  when  $t = 2$  (2)

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**Question 2 continued**

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**(Total for Question 2 is 6 marks)**

