

Advanced Higher Maths
SQA 2021 Paper 1
Question 6



The velocity, $v \text{ m s}^{-1}$, of a particle after t seconds is given by $v = 3t^2 - e^{-2t}$.

At time $t = 0$ the displacement of the particle is zero.

- (a) Find an expression for the displacement of the particle. 2
- (b) Calculate the acceleration of the particle when $t = 0$. 2
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Answers:

(a) $t^3 + \frac{1}{2}e^{-2t} - \frac{1}{2}$

(b) 2ms^{-2}