7 A particle is travelling in a straight line. Its displacement, s metres, from the origin at time t seconds is given by $s = 1.5e^{2t} + 2e^{-2t} - t$.

(a) Find expressions for the velocity, $v\,\text{ms}^{-1}$, and acceleration, $a\,\text{ms}^{-2}$, of the particle. [3]

(b) Find the time, T seconds, when the particle is at rest. [4]

(c) Find the acceleration of the particle at time T seconds. [2]

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