5 The velocity, $v\,\text{ms}^{-1}$, of a particle moving in a straight line, t seconds after passing through a fixed point O, is given by $v = 6\sin 3t$.

(a) Find the time at which the acceleration of the particle is first equal to $-9\,\text{ms}^{-2}$. [4]

(b) Find the displacement of the particle from O when $t = 5.6$. [4]