11E Deriving SUVAT

1. A particle moves in a straight line with constant acceleration, $a\ ms^{-2}$. Given that its initial velocity is $u\ ms^{-1}$ and its initial displacement is 0m, prove that:

a) The particle's velocity at time t seconds is given by $v = u + at$

b) The particle's displacement, s, at time t is given by $s = ut + \frac{1}{2}at^2$