A particle P is projected with speed $25\,\mathrm{m\,s^{-1}}$ at an angle of $30°$ above the horizontal from a point O on horizontal ground. At time t s after projection the horizontal and vertically upwards displacements of P from O are x m and y m respectively.

(i) Express x and y in terms of t and hence show that the equation of the trajectory of P is

$$y = \frac{x}{\sqrt{3}} - \frac{4x^2}{375}.$$ [4]

(ii) Find the horizontal distance between the two points at which P is 5 m above the ground. [3]