3 A particle P is moving in a horizontal straight line. Initially P is at the point O on the line and is moving with velocity $25\,\text{m s}^{-1}$. At time t s after passing through O, the acceleration of P is $\frac{4000}{(5t+4)^3}\,\text{m s}^{-2}$ in the direction PO. The displacement of P from O at time t is x m.

Find an expression for x in terms of t. [5]