$x = 4t^3, y = 5 + 60t - 8t^2 \Rightarrow \dfrac{dy}{dx} = \dfrac{dy/dt}{dx/dt} = \dfrac{60 - 16t}{12t^2}$. Now solve $\dfrac{dy}{dx} = 1 \Leftrightarrow \dfrac{60 - 16t}{12t^2} = 1 \Leftrightarrow 12t^2 + 16t - 60 = 0 \Leftrightarrow 4(3t - 5)(t + 3) = 0 \Leftrightarrow t = \frac{5}{3}$ or $t = -3$. If $t = \frac{5}{3}$, the point is $(500/27, 745/9)$, and if $t = -3$, the point is $(-108, -247)$.