7 **(a)** Variables x and y are such that $y = \dfrac{1+\cos^2 x}{\tan x}$. Use differentiation to find the approximate change in y as x increases from $\dfrac{\pi}{4}$ to $\dfrac{\pi}{4}+h$, where h is small. [5]

(b) Given that $y = \frac{1}{(x-3)^3}$ show that $y - \frac{dy}{dx} - \frac{1}{3}\left(\frac{d^2y}{dx^2}\right)$ can be written as $\frac{(x+1)(x-4)}{(x-3)^5}$. [4]