6 Variables x and y are such that $y = \cos x \sin^2 x$. Use differentiation to find the approximate change in y as x increases from 3 to $3 + h$, where h is small. [5]

7 It is given that $y = mx^2 + \frac{x}{2} + n$, where m and n are non-zero constants. It is also given that $3\left(\frac{\mathrm{d}^2y}{\mathrm{d}x^2}\right) = \left(\frac{\mathrm{d}y}{\mathrm{d}x}\right)^2 - y$ for all values of x. Find the values of m and n. [4]