**9C (Part 2) The Chain Rule**

1. Given that $y=\left(3x^{4}+x\right)^{5}$, find $\frac{dy}{dx}$ using the chain rule.
2. Given that $y=sin^{4}x$, find $\frac{dy}{dx}$
3. Given that $y=\sqrt{5x^{2}+1}$, find the gradient of the curve at $\left(4,9\right)$.