3 Given that $y = e^{2x}(x^2 + 1)$

(a) find $\dfrac{dy}{dx}$

(3)

The straight line l is the tangent to the curve with equation $y = e^{2x}(x^2 + 1)$ at the point on the curve where $x = 0$

(b) Find an equation for l in the form $y = mx + c$

(3)

Question 3 continued

(Total for Question 3 is 6 marks)