

6 (a) Given that $y = (4x - 3)e^{2x}$

(i) find $\frac{dy}{dx}$ (3)

(ii) show that $(4x - 3)\frac{dy}{dx} = (8x - 2)y$ (2)

(b) Differentiate $\frac{\sin 5x}{(x - 3)^2}$ with respect to x (3)

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Question 6 continued

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(Total for Question 6 is 8 marks)