

8 Given that $2xy + 5y = e^x$

(a) show that $\frac{dy}{dx} = \frac{y(2x+3)}{2x+5}$

(5)

(b) find the value of $\frac{dy}{dx}$ when $x = 0$

(2)

(c) find an equation of the normal to the curve with equation $2xy + 5y = e^x$ at the point where $x = 0$

Give your answer in the form $px + qy + r = 0$ where p , q and r are integers.

(3)

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(Total for Question 8 is 10 marks)

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