

Advanced Higher Maths
SQA 2021 Paper 2
Question 8



A curve is defined by $x^2y^3 + e^{2y} = 5$.

- (a) Find $\frac{dy}{dx}$ in terms of x and y . 4
- (b) Show that there is only one stationary point on the curve. 3
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Answers:

(a)
$$\frac{-2xy^3}{3x^2y^2 + 2e^{2y}}$$

- (b) Solve derivative = 0 to obtain only one stationary point:

$$\left(0, \frac{1}{2} \ln 5\right)$$