

Advanced Higher Maths
SQA 2024 Paper 1
Question 7



A curve is defined by the equation $x^2y + 4xy^2 = -32$, $y > 0$.

- (a) Use implicit differentiation to find an expression for $\frac{dy}{dx}$. 3

The curve has only one stationary point.

- (b) Find the coordinates of the stationary point. 3
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Answers:

(a)
$$\frac{dy}{dx} = \frac{-2xy - 4y^2}{x^2 + 8xy}$$

(b) $(-4, 2)$