

**Advanced Higher Maths
SQA 2019 Specimen
Paper 2 Question 6**

Solve $\frac{dy}{dx} = e^{2x}(1+y^2)$ given that when $x=0$, $y=1$.

Express y in terms of x .

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Answer:

$$y = \tan\left(\frac{1}{2}e^{2x} + \frac{\pi}{4} - \frac{1}{2}\right)$$