

Advanced Higher Maths
SQA 2016 Paper
Question 15



Solve the differential equation

$$\frac{d^2y}{dx^2} + 5\frac{dy}{dx} + 6y = 12x^2 + 2x - 5$$

given $y = -6$ and $\frac{dy}{dx} = 3$, when $x = 0$.

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Answer:

$$y = 8e^{-3x} - 15e^{-2x} + 2x^2 - 3x + 1$$