# Advanced Higher Maths
# SQA 2016 Exemplar
# Question 17

Advanced Higher Maths
Maths.scot

(a) Find the general solution of the differential equation

$$\frac{d^2y}{dx^2} - \frac{dy}{dx} - 2y = e^x + 12.$$ 7

(b) Find the particular solution for which $y = -\frac{3}{2}$ and $\frac{dy}{dx} = \frac{1}{2}$ when $x = 0$. 3

Answers:

(a) $y = Ae^{-x} + Be^{2x} - \frac{1}{2}e^x - 6$

(b) $y = 3e^{-x} + 2e^{2x} - \frac{1}{2}e^x - 6$