Advanced Higher Maths
SQA 2019 Paper
Question 16

Advanced Higher Maths
Maths.scot

(a) Use integration by parts to find the exact value of $\int_0^1 \left(x^2 - 2x + 1\right)e^{4x}\,dx$. **5**

(b) A solid is formed by rotating the curve with equation $y = 4\left(x - 1\right)e^{2x}$ between $x = 0$ and $x = 1$ through 2π radians about the x-axis.

Find the exact value of the volume of this solid. **3**

Answers:

(a) $\frac{1}{32}\left(e^4 - 13\right)$

(b) $\frac{\pi}{2}\left(e^4 - 13\right)$