Advanced Higher Maths
SQA 2016 Exemplar
Question 8

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(a) Give the first three non-zero terms of the Maclaurin series for $\cos 3x$. **2**

(b) Write down the first four terms of the Maclaurin series for e^{2x}. **1**

(c) Hence, or otherwise, determine the Maclaurin series for $e^{2x}\cos 3x$ up to, and including, the term in x^3. **3**

Answers:

(a) $1-\frac{9x^2}{2}+\frac{27x^4}{8}$

(b) $1+2x+2x^2+\frac{4x^3}{3}$

(c) $1+2x-\frac{5x^2}{2}-\frac{23x^3}{3}$