Marked example 2

Paper 1 style · No calculator

2 5 marks SL 5.11 ●●○ Typical

It is given that $\int_0^2 f(x)\,\mathrm{d}x = 5$ and $\int_2^5 f(x)\,\mathrm{d}x = -3$.

(a) Write down the value of $\int_0^5 f(x)\,\mathrm{d}x$. **[1]**

(b) Write down the value of $\int_5^2 f(x)\,\mathrm{d}x$. **[1]**

(c) Find the value of $\int_0^2 (3f(x) - x)\,\mathrm{d}x$. **[3]**

MARKSCHEME (a)

$5 + (-3) = 2$ **A1**

Total 1 mark

MARKSCHEME (b)

3 **A1**

Total 1 mark

Note Reversed limits: the sign changes.

MARKSCHEME (c)

$3\int_0^2 f(x)\,\mathrm{d}x - \int_0^2 x\,\mathrm{d}x$ **M1**

$15 - \left[\frac{x^2}{2}\right]_0^2 = 15 - 2$ **A1**

$= 13$ **A1**

Total 3 marks

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