Exercise 1

Paper 1 style · No calculator

1 5 marks SL 5.11 ●○○ Routine

Let $f(x) = x^3 - 2x + 3$.

(a) Find $\int_0^2 f(x)\,\mathrm{d}x$. **[3]**

(b) Write down $\int_2^0 f(x)\,\mathrm{d}x$. **[1]**

(c) Find $\int_0^2 \big(f(x) + 2\big)\,\mathrm{d}x$. **[1]**

The markscheme is on the next page: try the question first. Written and verified by a practising IB mathematics teacher, produced with AI assistance; solved twice and recomputed by software. Not affiliated with or endorsed by the International Baccalaureate Organization.
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MARKSCHEME (a)

$\left[\frac{x^4}{4} - x^2 + 3x\right]_0^2$ **A1**

$(4 - 4 + 6) - 0$ **M1**

$= 6$ **A1**

Total 3 marks

MARKSCHEME (b)

-6 **A1**

Total 1 mark

MARKSCHEME (c)

$6 + 2 \times 2 = 10$ **A1**

Total 1 mark

Note $\int_0^2 2\,\mathrm{d}x = 4$, not 2.