Exercise 2

Paper 1 style · No calculator

2 4 marks SL 5.11 ●●○ Typical

It is given that $\int_1^k (2x-1)\,\mathrm{d}x = 6$, where $k > 1$. Find the value of k.

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

$\left[x^2 - x\right]_1^k = k^2 - k - 0$ **A1**

$k^2 - k = 6$ **M1**

$(k-3)(k+2) = 0$ **(A1)**

$k = 3$ **A1**

Total 4 marks

Note $k = -2$ is rejected: $k > 1$.