Exercise 1

Paper 1 style · No calculator

1 5 marks SL 5.11 ●○○ Routine

Let $f(x) = 9 - x^2$.

(a) Find the x-intercepts of the graph of f. **[1]**

(b) Find the area of the region enclosed by the graph of f and the x-axis. **[4]**

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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(a) Find the x-intercepts of the graph of f. **[1]**

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MARKSCHEME (a)

$x = -3$ and $x = 3$ **A1**

Total 1 mark

MARKSCHEME (b)

$\int_{-3}^{3} (9 - x^2)\,\mathrm{d}x$ **M1**

$\left[9x - \frac{x^3}{3}\right]_{-3}^{3}$ **A1**

$(27 - 9) - (-27 + 9)$ **A1**

$= 36$ **A1**

Total 4 marks