



QUESTION WORKBOOK

Definite integrals and areas

Integration · Year 12–13

6 questions · 22 marks

NAVY SCREEN EDITION

SECTION A · Warm-up

A1 Evaluate $\int_0^2 x^3 \, dx$. [2]

A2 Evaluate $\int_1^4 (2x + 1) \, dx$. [2]

SECTION B · Standard

B1 Find the area of the finite region enclosed between the curve $y = 6x - x^2$ and the x-axis. [4]

- B2** Find the total area enclosed between the curve $y = x(x - 2)$ and the x -axis from $x = 0$ to $x = 3$. [5]

- B3** Show that $\int_1^4 (x^2 + 3)/\sqrt{x} \, dx = 92/5$. [4]

SECTION C · Stretch

- C1** The curve C has equation $y = x^2 - 2x$ and the line l has equation $y = 3$. Show that the finite region enclosed by C and l has area $32/3$. [5]