

10 The equation of a curve C is $y = f(x)$ where $f'(x) = 3x^2 - 4x - p$ and $p \neq 0$

The points with coordinates $(2, 0)$ and $(-1, 9)$ lie on C .

(a) Show that C has equation $y = x^3 - 2x^2 - 4x + 8$

(6)

The straight line l has equation $y = 8 - 4x$

(b) Use algebraic integration to find the exact area of the finite region bounded by C and l .

(6)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



Question 10 continued

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



P 6 0 4 7 6 A 0 3 3 4 0

Question 10 continued

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Question 10 continued

Handwriting practice area with horizontal dotted lines.

(Total for Question 10 is 12 marks)

