Answer all ELEVEN questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1
$$f(x) = 3x^3 + 2\sin x - \frac{4}{x^2} \quad \text{where} \quad x \neq 0$$

(a) Find $f'(x)$

(3)

(b) Find $\int f(x)\,dx$

(4)

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Question 1 continued

(Total for Question 1 is 7 marks)