3. **In this question you must show all stages of your working.**
Solutions relying entirely on calculator technology are not acceptable.

(i) Determine

$$\int \frac{1}{4x^2 + 12x + 25}\,\mathrm{d}x$$

(4)

(ii) Show that

$$\int_3^9 \frac{1}{\sqrt{x^2 + 4x - 17}}\,\mathrm{d}x = \ln a$$

where a is an integer to be determined.

(6)

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Question 3 continued

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Question 3 continued

(Total for Question 3 is 10 marks)