3. Find

$$\int \frac{4x^5 + 3}{2x^2} \, \mathrm{d}x$$

giving your answer in simplest form.

(5)

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Question 3 continued

(Total for Question 3 is 5 marks)

4. Given that the equation

$$kx^2 + 6kx + 5 = 0 \qquad \text{where } k \text{ is a non zero constant}$$

has no real roots, find the range of possible values for k.

(4)

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