

Commentary on candidate evidence

The candidate evidence has achieved the following marks for each question of this question paper.

Question 1

Candidate 1

The candidate was awarded **4 marks**.

Although the candidate used incorrect notation for the binomial coefficients, they produced a correct expansion, including numerical values, so mark 1 was awarded. They correctly simplified the expression therefore marks 2 to 4 were awarded.

Candidate 2

The candidate was awarded **3 marks**.

The candidate produced a correct expansion, simplified coefficients, and resolved signs, so marks 1 to 3 were awarded. They made an error in simplifying powers of x therefore mark 4 was not awarded.

Candidate 3

The candidate was awarded **1 mark**.

The candidate made an error in the final term of the expansion so mark 1 was not awarded. They incorrectly resolved signs, so mark 2 was not awarded. The candidate correctly simplified the powers of x therefore mark 3 was awarded. They incorrectly simplified coefficients, so mark 4 was not awarded.

Candidate 4

The candidate was awarded **0 marks**.

The candidate gave a general term with no summation sign, so no marks were awarded.

Question 7

Candidate 5

The candidate was awarded **4 marks**.

The candidate produced an integral equation, integrated both sides and evaluated the constant correctly, so marks 1 to 4 were awarded. They did not correctly apply the laws of logarithms in their rearrangement, therefore mark 5 was not awarded.

Candidate 6

The candidate was awarded **3 marks**.

The candidate did not produce an integral equation, so mark 1 was not awarded. They integrated both sides and evaluated the constant correctly, so marks 2 to 4 were awarded. The candidate did not correctly apply the laws of logarithms in their rearrangement, therefore mark 5 was not awarded.

Candidate 7

The candidate was awarded **3 marks**.

The candidate produced an integral equation, and integrated the left-hand side correctly, so marks 1 and 2 were awarded. They made an error in integrating the right-hand side therefore mark 3 was not awarded. The candidate correctly

evaluated the constant, so mark 4 was awarded. They omitted the index in their final expression, therefore mark 5 was not awarded.

Candidate 8

The candidate was awarded **4 marks**.

The candidate produced an integral equation, integrated both sides and evaluated the constant correctly, so marks 1 to 4 were awarded. They changed a sign from subtraction to addition in their final expression, therefore mark 5 was not awarded.

Question 8(c)

Candidate 9

The candidate was awarded **2 marks**.

The candidate produced a correct direction vector and set of parametric equations, so marks 1 and 2 were awarded.

Candidate 10

The candidate was awarded **2 marks**.

The candidate produced a correct direction vector and, in accordance with the detailed marking instructions, the incorrect labelling of the direction vector was disregarded and mark 1 was awarded. They produced a correct set of parametric equations, therefore mark 2 was awarded.

Candidate 11

The candidate was awarded **1 mark**.

The candidate produced a correct direction vector, therefore mark 1 was awarded. They did not produce a correct set of parametric equations, so mark 2 was not awarded.

Candidate 12

The candidate was awarded **1 mark**.

The candidate produced a direction vector which was consistent with their answer to part (a), therefore mark 1 was awarded on follow-through. Although their parametric equations were consistent with their earlier answers, their direction vector had no zero component so mark 2 was not awarded.