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| Q | Scheme | Marks | AOs | Pearson Progression Step and Progress descriptor |
| **1a** | Clearly states that | **A1** | 1.1b | 5th  Integrate |
| Makes an attempt to integrate the remaining two terms. Raising a power by 1 would constitute an attempt. | **M1** | 1.1b |
| States the fully correct answer | **A1** | 1.1b |
|  | **(3)** |  |  |
| **1b** | Makes an attempt to substitute the limits into the expression. For example,is seen. | **M1** | 1.1b | 5th  Integrate |
| Begins to simplify this expression. For example, is seen. | **M1** | 1.1b |
| States the fully correct answeror states , *n* = 6 and  Also acceptor equivalent. | **A1** | 1.1b |
|  | **(3)** |  |  |
| (6 marks) | | | | |
| Notes | | | | |

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| Q | Scheme | Marks | AOs | Pearson Progression Step and Progress descriptor |
| **2** | Makes an attempt to find  Writingor writingconstitutes an attempt. | **M1** | 2.2a | 6th  Integrate using the reverse chain rule. |
| Correctly states | **A1** | 2.2a |
| Makes an attempt to substitute the limits *x* = ln *b* and *x* = ln 2 into  For example,and is seen. | **M1 ft** | 1.1b |
| Uses laws of logarithms to begin to simplify the expression. Eitheror is seen. | **M1 ft** | 2.2a |
| Correctly states the two answers as and | **A1 ft** | 1.1b |
| States that | **M1 ft** | 2.2a |
| Makes an attempt to solve this equation.  For example,is seen. | **M1 ft** | 1.1b |
| Correctly states the final answer *b* = 7 | **A1 ft** | 1.1b |
| (8 marks) | | | | |
| Notes  **2**  Student does not need to state ‘+C’ in an answer unless it is the final answer to an indefinite integral.  **2**  Award ft marks for a correct answer using an incorrect initial answer. | | | | |
| Q | Scheme | Marks | AOs | Pearson Progression Step and Progress descriptor |
| **3** | States that | **M1** | 2.2a | 6th  Integrate using trigonometric identities. |
| Makes an attempt to find  Writingor writing ln (sin *x*) constitutes an attempt. | **M1** | 2.2a |
| States a fully correct answer | **A1** | 1.1b |
| (3 marks) | | | | |
| **Notes** | | | | |

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| Q | Scheme | Marks | AOs | Pearson Progression Step and Progress descriptor |
| **4** | Selects as the appropriate trigonometric identity. | **M1** | 2.2a | 6th  Integrate using trigonometric identities. |
| Manipulates the identity to the question: | **M1** | 1.1b |
| States that | **M1** | 1.1b |
| Makes an attempt to integrate the expression, *x* and sin *x* are seen. | **M1** | 1.1b |
| Correctly states | **A1** | 1.1b |
| (5 marks) | | | | |
| Notes  **4**  Student does not need to state ‘+C’ to be awarded the third method mark. Must be stated in the final answer. | | | | |

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| Q | Scheme | Marks | AOs | Pearson Progression Step and Progress descriptor |
| **5** | Makes an attempt to find. Raising the power by 1 would constitute an attempt. | **M1** | 1.1b | 6th  Integrate using the reverse chain rule. |
| Correctly states | **A1** | 2.2a |
| States | **M1 ft** | 1.1b |
| Makes an attempt to solve this equation. For example,oris seen. | **M1 ft** | 1.1b |
| Solves to find | **A1 ft** | 1.1b |
| (5 marks) | | | | |
| Notes  **5**  Student does not need to state ‘+C’ in an answer unless it is the final answer to an indefinite integral.  **5**  Award ft marks for a correct answer using an incorrect initial answer. | | | | |

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| Q | Scheme | Marks | AOs | Pearson Progression Step and Progress descriptor |
| **6a** | Correctly states | **M1** | 1.1b | 6th  Integrate using trigonometric identities. |
| Correctly states    or states | **M1** | 1.1b |
| Adds the two above expressions and states | **A1** | 1.1b |
|  | **(3)** |  |  |
| **6b** | States that | **M1** | 2.2a | 6th  Integrate functions of the form f(*ax* + *b*). |
| Makes an attempt to integrate. Changing cos to sin constitutes an attempt. | **M1** | 1.1b |
| Correctly states the final answero.e. | **A1** | 1.1b |
|  | **(3)** |  |  |
| (6 marks) | | | | |
| Notes  **6b**  Student does not need to state ‘+C’ to be awarded the first method mark. Must be stated in the final answer. | | | | |

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| Q | Scheme | Marks | AOs | Pearson Progression Step and Progress descriptor |
| **7** | Makes an attempt to find. Raising the power by 1 would constitute an attempt. | **M1** | 2.2a | 6th  Integrate using the reverse chain rule. |
| States a fully correct answer | **M1** | 2.2a |
| Makes an attempt to substitute the limits | **M1 ft** | 1.1b |
| Correctly states answer is | **A1 ft** | 1.1b |
| (4 marks) | | | | |
| Notes  **7**  Student does not need to state ‘+C’ to be awarded the second method mark.  **7**  Award ft marks for a correct answer using an incorrect initial answer. | | | | |

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| Q | Scheme | Marks | AOs | Pearson Progression Step and Progress descriptor |
| **8** | Recognises the need to write | **M1** | 2.2a | 6th  Integrate using trigonometric identities. |
| Selects the correct trigonometric identity to write . Could also write | **M1** | 2.2a |
| Makes an attempt to find | **M1** | 1.1b |
| Correctly states answer | **A1** | 1.1b |
| (4 marks) | | | | |
| **Notes** | | | | |

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| Q | Scheme | Marks | AOs | Pearson Progression Step and Progress descriptor |
| **9a** | Recognises the need to write | **M1** | 2.2a | 6th  Integrate using trigonometric identities. |
| Recognises the need to write | **M1** | 2.2a |
| Multiplies out the bracket and makes a further substitution | **M1** | 2.2a |
| States the fully correct final answer | **A1** | 1.1b |
|  | **(4)** |  |  |
| **9b** | States or implies that | **M1** | 1.1b | 6th  Integrate using the reverse chain rule. |
| States fully correct integral | **M1** | 2.2a |
| Makes an attempt to substitute the limits. For example,  is seen. | **M1 ft** | 1.1b |
| Begins to simplify the expression | **M1 ft** | 1.1b |
| States the correct final answer | **A1 ft** | 1.1b |
|  | **(5)** |  |  |
| (9 marks) | | | | |
| Notes  **9b**  Student does not need to state ‘+C’ to be awarded the second method mark.  **9b**  Award ft marks for a correct answer using an incorrect initial answer. | | | | |