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**Mathematics Specialist  
YEAR 12**

**Investigation 3 – Integration**

**Semester 2 2017**

**In-Class Validation Test**

**Time allowed:** 35 minutes

**Marks Available:** 33 marks

**Materials required:** Writing implements, correction fluid/tape or eraser, ruler, Scientific or CAS calculator, one double sided unfolded A4 page of notes.

**Instructions:**

1. Write your answers in the spaces provided in this Question/Answer Booklet.
2. **Show all your working clearly in preparation for the Validation Test**. Your working should be in sufficient detail to allow your answers to be checked readily and for marks to be awarded for reasoning. Incorrect answers given without supporting reasoning cannot be allocated any marks. For any question or part question worth more than two marks, valid working or justification is required to receive full marks. If you repeat an answer to any question, ensure that you cancel the answer you do not wish to have marked.

1. Use ***integration by parts***, , to determine each of the following integrals:
2. [4]
3. [4]
4. [4]
5. [6]

1. Use ***integration by parts*** to show that [7]
2. (a) Use ***integration by parts*** to show that . [4]

(b) Hence, or otherwise, show that . [4]

**End of Validation Test**

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You may use this space to extend or re-attempt an answer to a question or questions and should you do so then number the question(s) attempted and cross out any previous unwanted working.

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