**Mathematics Specialist: Unit 4**

**Investigation 3 – INTEGRATION SOLUTIONS**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Part 2*: Validation Test Time: 35 minutes Marks: 33**

Use ***integration by parts***, , to determine each of the following integrals:

1. ( 4 marks)

Put and

dx ✓✓

dx ✓

✓

1. ( 4 marks)

Put and

✓✓

✓

✓

1. ( 4 marks)

Put and

✓✓

✓✓

1. ( 6 marks)

Put and

✓✓

✓

Put and

✓✓

✓

1. Use ***integration by parts*** to show that

(7 marks)

Put and

✓

✓

Put and

✓

✓

✓

✓

✓

1. (a) Use ***integration by parts*** to show that . (4 marks)

Put and

✓✓

since ✓

✓

(b) Hence, or otherwise, show that . (4 marks)

dx = ✓

from part (a)

✓

✓

✓

Or alternatively as follows