

Commentary on candidate evidence

The evidence for these candidates has achieved the following marks for each question of this course assessment component.

Candidate 1

Question 1

The candidate was awarded **3/4 marks**.

- ◆ Marks 1, 2 and 3 awarded
- ◆ Mark 4 not awarded

A surprising number of candidates were unable to process $2x^2 = 0$ correctly.

Candidate 2

Question 1

The candidate was awarded **3/4 marks**.

- ◆ Marks 1 and 2 awarded
- ◆ Mark 3 not awarded
- ◆ Mark 4 awarded on follow-through

Many candidates did not always apply lower level skills correctly.

Candidate 3

Question 1

The candidate was awarded **2/4 marks**.

- ◆ Marks 1 and 2 awarded
- ◆ Marks 3 and 4 not awarded

Mark 2 awarded even though the candidate's working shows a lack of understanding.

Candidate 4

Question 2

The candidate was awarded **0/3 marks**. See note 3 of the marking instructions.

This question was generally answered well, but some candidates included x within their expression for the discriminant.

Candidate 5

Question 2

The candidate was awarded **1/3 marks**.

- ◆ Mark 1 awarded
- ◆ Marks 2 and 3 not awarded (see note 3 of the marking instructions)

This is not similar to Candidate A as the expression for the discriminant is invalid.

Candidate 6

Question 3

The candidate was awarded **0/2 marks**.

- ◆ No marks awarded (see note 4 and candidate A)

Many candidates appeared to have ignored obvious errors they had made.

Candidate 7

Question 4(a)

The candidate was awarded **3/3 marks**.

- ◆ Marks 1, 2 and 3 awarded (see note 2)

Question 4(b)

The candidate was awarded **0/1 marks**.

- ◆ Mark 4 not awarded

Many candidates struggled to process the fractions and a significant minority did not even attempt part 4(b).

Candidate 8

Question 4(a)

The candidate was awarded **2/3 marks**.

- ◆ Marks 1 and 2 awarded
- ◆ Mark 3 not awarded

Question 4(b)

The candidate was awarded **0/1 marks**.

- ◆ Mark 4 not awarded

It was common for lower level skills to cost candidates marks.

Candidate 9

Question 4(a) and (b)

The candidate was awarded **4/4 marks**.

- ◆ Marks 1, 2, 3 and 4 awarded (general marking principles - L)

The candidate has started the sequence at u_0 and has found the fourth term.

Candidate 10

Question 5(a)

The candidate was awarded **2/3 marks**.

- ◆ Marks 1 and 2 awarded
- ◆ Mark 3 not awarded (see note 4 of the marking instructions)

Communication for mark 3 was often incorrect or incomplete.

Candidate 11

Question 5(a)

The candidate was awarded **2/3 marks**.

- ◆ Marks 1 and 2 awarded
- ◆ Mark 3 not awarded (see note 4 of the marking instructions)

Candidates needed to refer to 'the points' for mark 3 to be awarded.

Candidate 12

Question 5(a)

The candidate was awarded **1/3 marks**.

- ◆ Mark 1 awarded
- ◆ Marks 2 and 3 not awarded

Question 5(b)

The candidate was awarded **0/1 marks**.

- ◆ Mark 4 not awarded.

Candidate 13

Question 6

The candidate was awarded **2/3 marks**.

- ◆ Marks 1 and 2 awarded
- ◆ Mark 3 not awarded (candidate D)

This question was generally well done.

Candidate 14

Question 7

The candidate was awarded **4/4 marks**.

Marks awarded for mathematically equivalent answer.

Candidate 15

Question 7

The candidate was awarded **3/4 marks**.

- ◆ Mark 1 not awarded
- ◆ Marks 2, 3 and 4 awarded (candidate B)

Evidence of the correct angle is needed for mark 1 to be awarded.

Candidate 16

Question 7

The candidate was awarded **3/4 marks**.

- ◆ Mark 1 not awarded
- ◆ Marks 2, 3 and 4 awarded (candidate C)

Incorrect lines of working do not gain full credit.

Marks should not be awarded for inferring what a candidate means.

Candidate 17

Question 8(a)

The candidate was awarded **0/1 marks**.

There was clear evidence of a lack of understanding about the relationship between integrals and area.

Additional errors included lack of limits, lack of ' dx ', poor use of brackets, and reversed limits.

Candidate 18

Question 8(b)

The candidate was awarded **2/3 marks**.

- ◆ Marks 2 and 3 awarded
- ◆ Mark 4 not awarded (general marking principles - J)

Where the final answer is a fraction it should be simplified as far as possible.

Candidate 19

Question 8(a)

The candidate was awarded **1/1 marks**.

Question 8(b)

The candidate was awarded **2/3 marks**.

- ◆ Marks 2 and 3 awarded
- ◆ Mark 4 not awarded

Many candidates started working from the beginning again in part (b), indicating that they did not fully understand the process.

Careless numerical errors cost many candidates marks.

Candidate 20

Question 9(a)(i) and 9(a)(ii)

The candidate was awarded **2/4 marks**.

- ◆ Marks 1 and 2 awarded
- ◆ Marks 3 and 4 not awarded (multiple expressions)

Candidates' working should be consistent from line to line.

Candidate 21

Question 9(a)(i) and (a)(ii)

The candidate was awarded **2/4 marks**.

- ◆ Mark 1 awarded
- ◆ Marks 2 and 3 not awarded
- ◆ Mark 4 awarded (similar to candidate A)

Question 10

Responses to question 10(b) were disappointing.

$k = -1$ was a common response.

Candidate 22

Question 11

The candidate was awarded **0/4 marks**.

No follow through marks are available for an invalid approach such as this.

Candidate 23

Question 11

The candidate was awarded **1/4 marks**.

- ◆ Mark 1 not awarded (see note 3 of the marking instructions)
- ◆ Mark 2 awarded on follow-through
- ◆ Marks 3 and 4 not awarded (note 5 of the marking instructions)

It was common to see candidates using ‘ -0 ’ as their substitution of the lower limit.

Candidate 24

Question 11

The candidate was awarded **3/4 marks**.

- ◆ Marks 1, 2 and 3 awarded
- ◆ Mark 4 not awarded

Even for those candidates who understood the process, numerical inaccuracies cost marks.

Candidate 25

Question 12(a)

The candidate was awarded **1/2 marks**.

- ◆ Mark 1 awarded
- ◆ Mark 2 not awarded

Candidates' working should be consistent from line to line.

Candidate 26

Question 13

The candidate was awarded **4/5 marks**.

- ◆ Marks 3 and 4 awarded
- ◆ Mark 5 not awarded

This question performed well, however, lower level skills involving surds and fractions cost candidates marks.

Candidate 27

Question 14(a)

The candidate was awarded **3/3 marks**.

- ◆ Marks 1, 2 and 3 awarded

Candidate 28

Question 14(b)

The candidate was awarded **1/3 marks**.

- ◆ Mark 4 awarded
- ◆ Marks 5 and 6 not awarded (see note 4 of the marking instructions)

The final answer is not simply for solving a linear equation – it must follow from valid working.

Candidate 29

Question 15(a)

The candidate was awarded **2/4 marks**.

- ◆ Mark 1 awarded
- ◆ Marks 2 and 3 not awarded
- ◆ Mark 4 awarded on follow through (candidate A)

Candidates should be encouraged to communicate 'no solutions' rather than scoring out working.

Candidate 30

Question 15(a)

The candidate was awarded **2/4 marks**.

- ◆ Marks 1 and 2 awarded
- ◆ Marks 3 and 4 not awarded

Many candidate responses were disappointing when solving trigonometric equations.

Candidate 31

Question 16(a)

The candidate was awarded **1/2 marks**.

- ◆ Mark 1 awarded
- ◆ Mark 2 not awarded

It was common to see candidates 'fudging' their working.

Candidate 32

Question 16(a)

The candidate was awarded **1/2 marks**.

- ◆ Mark 1 awarded
- ◆ Mark 2 not awarded

Question 16(b)

The candidate was awarded **3/4 marks**.

- ◆ Mark 3 not awarded
- ◆ Marks 4, 5 and 6 awarded

In 'show that' questions candidates must use the given expression in subsequent parts.

It was rare to see candidates giving justification for their final answer.

Candidate 33

Question 16(b)

The candidate was awarded **1/4 marks**.

- ◆ Marks 3 and 4 not awarded
- ◆ Mark 5 awarded
- ◆ Mark 6 not awarded

Many candidates did not interpret the question correctly.

Candidate 34

Question 16(b)

The candidate was awarded **1/4 marks**.

- ◆ Marks 3 and 4 not awarded
- ◆ Mark 5 awarded
- ◆ Mark 6 not awarded (candidate A)

Restating the question was not sufficient communication.

Candidate 35

Question 17(a)

The candidate was awarded **0/3 marks**.

- ◆ Marks 1, 2 and 3 not awarded

Inability to apply lower levels skills or use information on the formulae list cost candidates marks.

Candidate 36

Question 17(a) and (b)

The candidate was awarded **0/5 marks**.

- ◆ No marks awarded (see note 3 of the marking instructions)

For those candidates who did complete part (a) successfully, many lost additional marks by omitting '+c' or failing to integrate '1' correctly.