

Commentary on candidate evidence

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

Candidate 1 (paper 2 — question 1)

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

Although answered well by most candidates, marks were lost because of poor notation, lack of rigour with brackets, and arithmetic errors.

Candidate 2 (paper 2 — question 1)

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

Candidates lost marks for arithmetic errors where a calculator could have been used.

Candidate 3 (paper 2 — question 2(b))

- ◆ Marks 2, 3, 4 and 5 awarded – see note 1 of the marking instructions for mark 2

Candidates should be encouraged to use brackets appropriately when substituting negative values.

Candidate 4 (paper 2 — question 3)

- ◆ Marks 1, 2 and 3 not awarded

Although answered correctly by the majority of candidates, a significant number failed to determine the derivative and simply substituted into the original function.

Candidate 5 (paper 2 — question 3)

- ◆ Marks 1, 2 and 3 awarded

Candidate 6 (paper 2 — question 3)

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

By defaulting to a table of signs, candidates used an inefficient method. A number of candidates then assumed they were dealing with a stationary point.

Candidate 7 (paper 2 — question 4)

- ◆ Marks 1, 2 and 3 awarded

Candidate 8 (paper 2 — question 4)

- ◆ Marks 1 and 2 awarded
- ◆ Mark 3 not awarded – lack of rigour

Candidates should be encouraged to use brackets appropriately.

Candidate 9 (paper 2 — question 5(b))

- ◆ Marks 4 and 5 awarded

Many candidates did not choose the most efficient method of solving the simultaneous equations.

Candidate 10 (paper 2 — question 5(b) and (c))

- ◆ Mark 4 not awarded
- ◆ Mark 5 awarded on follow through
- ◆ Marks 6 and 7 awarded on follow through

Errors in processing the simultaneous equations made part (c) less straightforward, and more time consuming for candidates.

Candidate 11 (paper 2 — question 6(b))

- ◆ Marks 4 and 5 awarded
- ◆ Marks 6, 7, 8 and 9 not awarded

Most candidates were able to attempt this question, but some were unable to deal with the quadratic equation satisfactorily.

Candidate 12 (paper 2 — question 7(a) and (c))

- ◆ Marks 1 and 2 awarded
- ◆ Marks 3 and 4 not awarded
- ◆ Mark 6 awarded
- ◆ Mark 7 awarded in a(ii) – see note 4 of the marking instructions
- ◆ Mark 8 not awarded – appearance of $f'(x)$ not relevant

Candidate 13 (paper 2 — question 8(a))

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

Many candidates did not process the angle correctly or failed to give the answer in the correct form.

Candidate 14 (paper 2 — question 8(a))

- ◆ Marks 1, 2 and 4 not awarded – see Candidate C of the marking instructions
- ◆ Mark 3 awarded

The solution at mark 4 must be consistent with the equations at mark 2.

Candidate 15 (paper 2 — question 8(a))

- ◆ Marks 1, 2, 3 and 4 not awarded

A lack of attention to detail combined with basic arithmetic mistakes cost some candidates a lot of marks.

Candidate 16 (paper 2 — question 8(b))

- ◆ Mark 5, 6 and 7 awarded

Many candidates were unable to identify the minimum in b(i).
In b(ii), a sketch was useful to those who identified the minimum in b(i).

Candidate 17 (paper 2 — question 9)

- ◆ Marks 1, 2, 3 and 4 awarded
- ◆ Mark 5 not awarded as the function is not continuous
- ◆ Mark 6 awarded

Centres should take note of the acceptable variations of tables of signs in the detailed marking instructions

Candidate 18 (paper 2 — question 9)

- ◆ Marks 1 and 2 not awarded – see Candidate A of the marking instructions
- ◆ Marks 3 and 4 awarded
- ◆ Marks 5 and 6 not awarded

Most candidates understood the correct strategy to be applied, however many solutions were poorly set out and contained algebraic errors.

Many candidates did not calculate the minimum value of P .

Candidate 19 (paper 2 — question 10)

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

Candidates should be encouraged to use an annotated sketch to justify their solution.

Candidate 20 (paper 2 — question 10)

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

Many candidates made no attempt to give a justification for their stated range.

Candidate 21 (paper 2 — question 11(a))

- ◆ Mark 1 awarded
- ◆ Marks 2, 3 and 4 not awarded – see note 5 of the marking instructions

Many candidates gave inventive, but mathematically incorrect, solutions

Candidate 22 (paper 2 — question 11(a))

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

Candidate 23 (paper 2 — question 12(a)(ii))

- ◆ Mark 2 not awarded

Many candidates chose an inefficient method for this part of the question. A lack of communication in candidates' working was common.

Candidate 24 (paper 2 — question 12(b))

- ◆ Mark 3 awarded
- ◆ Mark 4 not awarded
- ◆ Mark 5 awarded
- ◆ Mark 6 not awarded – see note 7 of the marking instructions

Many candidates did not interpret the ratio correctly in this question.