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 1 — question 1)

♦ Mark 1 awarded
♦ Mark 2 not awarded
♦ Mark 3 awarded on follow through

Basic arithmetic errors cost candidates' valuable marks throughout the paper.

Candidate 2 (paper 1 — question 1)

♦ Mark 1 not awarded
  General Marking Principle (GMP) (o) – only mark the replacement working
♦ Marks 2 and 3 not awarded – see notes 1, 2 and 4 within the marking instructions

Attempting to find the equation of the altitude through R was a common response.

Candidate 3 (paper 1 — question 2)

♦ Mark 1 not awarded – poor algebraic manipulation was common
♦ Mark 2 awarded
♦ Mark 3 awarded

Candidate 4 (paper 1 — question 2)

♦ Mark 1 and 2 awarded
♦ Mark 3 not awarded – fewer candidates wrote $g'(x)$ instead of $g^{-1}(x)$ this year

Although most candidates were able to find a formula for the inverse function, some solutions showed a lack of logic between one line of working and the next. In general, candidates' using method 1 demonstrated more rigour in their solutions.

Candidate 5 (paper 1 — question 3)

♦ Marks 1 and 2 awarded
♦ Mark 3 not awarded as the candidate has not simplified their final answer – GMP (j)

Candidate 6 (paper 1 — question 3)

♦ Marks 1 and 2 awarded
♦ Mark 3 not awarded

Many candidates interpreted $\sin 2x$ as $2\sin x$ when evaluating the derivative.

Candidate 7 (paper 1 — question 4)

♦ Marks 1, 2 and 3 awarded
♦ Mark 4 not awarded as the final equation has not been simplified

This unsimplified form of the equation of a straight line has not been accepted since 2016.

Candidate 8 (paper 1 — question 5)

♦ Award marks 1 and 2

Diagrams were useful to candidates in helping to interpret the ratio.

Candidate 9 (paper 1 — question 5)

♦ Mark 1 not awarded
♦ Mark 2 awarded

Many candidates were unable to deal successfully with the ratio in this question.

Candidates often used inefficient methods in both parts (a) and (b).

Candidate 10 (paper 1 — question 5)

♦ Mark 1 awarded
♦ Mark 2 not awarded

In this question, many candidates failed to use a simple numerical approach.

Many candidates did not apply a 'reality check' to their answer to part (b).

Candidate 11 (paper 1 — question 6)

♦ Marks 1 and 2 awarded
♦ Mark 3 not awarded

Many candidates understood the laws of logarithms but were unable to evaluate the final answer.

Candidate 12 (paper 1 — question 6)

♦ Mark 1 awarded
♦ Marks 2 and 3 not awarded

A number of candidates were let down by their application of the rules of indices.

Candidate 13 (paper 1 — question 7(c))

♦ Marks 5, 6, 7, and 8 not awarded – see note 10 of the marking instructions

Candidate 14 (paper 1 — question 7(c))

♦ Marks 5, 6, 7 and 8 not awarded – see notes 5 & 10 of the marking instructions

A surprisingly large number of candidates were unable to make progress in part (c) despite this being a familiar type of question.

Where candidates applied a valid strategy, the majority scored full marks.

Candidate 15 (paper 1 — question 8)

♦ Mark 1 awarded – see Candidate A of the marking instructions. Processing of the constant term was not penalised.
♦ Mark 2 not awarded – GMP (g)

There is an expectation that candidates use correct mathematical notation. Where exceptions to this are treated as bad form these are highlighted in the detailed marking instructions.

Candidate 16 (paper 1 — question 9)

♦ Mark 1 awarded
♦ Marks 2 and 3 not awarded

Few candidates stated a pathway in terms of directed line segments at mark 2.

Candidate 17 (paper 1 — question 10)

♦ Marks 1, 2 and 3 awarded
♦ Mark 4 not awarded

The equation has not been stated explicitly.

Most candidates understood the strategy to be used but some failed to answer the question fully by not stating y in terms of x.

Candidate 18 (paper 1 — question 11(a))

♦ Marks 1 and 2 not awarded

Candidates struggled to interpret both transformations successfully.
The transformations were not independent of each other.

Candidate 19 (paper 1 — question 11(a))

♦ Marks 1 and 2 not awarded – see note 3 of the marking instructions

Some candidates appeared to assume that the only transformation which can be applied to a logarithmic graph was a reflection in the line $y = x$.

Candidate 20 (paper 1 — question 12(a))

♦ Mark 1 not awarded

Vector notation was confused by some candidates.

Candidate 21 (paper 1 — question 12(b))

♦ Mark 2 awarded
♦ Marks 3 and 4 not awarded

Many candidates were unable to expand $(4 + p)^2$ correctly.

Candidate 22 (paper 1 — question 12(b))

♦ Mark 2 awarded – see note 3 of the marking instructions
♦ Marks 3 and 4 not awarded

Many candidates were unable to deal with the square root successfully.

Note 3 is an example of a lack of rigour which has not been penalised and is explicitly stated in the detailed marking instructions.

Candidate 23 (paper 1 — question 13(a))

♦ Marks 1 and 2 awarded
♦ Mark 3 not awarded
♦ Mark 4 not awarded

A surprising number of numerical inaccuracies cost candidates marks in this question.

Candidate 24 (paper 1 — question 13(a))

♦ Mark 1 not awarded
♦ Marks 2 and 3 awarded
♦ Mark 4 awarded

Many candidates did not deal with the right-angled triangle correctly which led to trigonometric ratios which were greater than 1.

Candidate 25 (paper 1 — question 13(b))

♦ Marks 5, 6 and 7 not awarded

Significant numbers of candidates were unable to apply the addition formula to $\sin 3x$ despite the 'signposting' in the question.

Candidate 26 (paper 1 — question 14)

♦ Marks 1, 2, 3, 4 and 5 not awarded

Candidate 27 (paper 1 — question 14)

♦ Marks 1 and 2 awarded
♦ Mark 3 not awarded
♦ Mark 4 awarded
♦ Mark 5 not awarded

Although most candidates were able to attempt this question, many solutions were poorly set out and contained basic algebraic and arithmetic errors.

Candidate 28 (paper 1 — question 15)

♦ Marks 1 and 2 awarded
♦ Marks 3 and 4 not awarded

Most candidates were able to access marks 1 and 2, but a lack of accuracy meant they lost mark 3. Few were able to interpret the orientation of the cubic graph correctly at mark 4.

Candidate 29 (paper 1 — question 15)

♦ Marks 1, 2, 3 and 4 not awarded

Many candidates did not draw a cubic graph.