

Principal Assessor Report 2004

Assessment Panel:

Mathematics

Qualification area

**Subject(s) and Level(s)
Included in this report**

Mathematics — Higher

Statistical information: update

Number of entries in 2003	19961
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Number of entries in 2004 (pre-Appeal)	19385
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General comments re entry numbers

This indicates a 3.0% drop in the number of entries.

Statistical Information: Performance of candidates

Distribution of awards

See table overleaf.

Comments on any significant changes in percentages or distribution of awards

There were no significant changes in the percentages/distribution of awards.

Grade boundaries for each subject area included in the report

Distribution of awards pre-Appeal	%	Cum %	Number of candidates	Lowest mark
A	22.8	22.8	4419	102
B	20.4	43.2	3960	82
C	24.6	67.8	4771	62
D	9.5	77.3	1844	52
No award	22.7	100.0	<u>4391</u>	0
			Total -	19385

General commentary on passmarks and grade boundaries

- While SQA aims to set examinations and create mark schemes which will allow a competent candidate to score a minimum 50% of the available marks (notional passmark) and a very well-prepared, very competent candidate to score at least 70%, it is almost impossible to get the standard absolutely on target every year, in every subject and level
- Each year we therefore hold a passmark meeting for each subject at each level where we bring together all the information available (statistical and judgmental). The Principal Assessor and SQA Qualifications Manager meet with the relevant SQA Business Manager and Statistician to discuss the evidence and make decisions. The meetings are chaired by members of the senior management team at SQA
- We adjust the passmark downwards if there is evidence that we have set a slightly more demanding exam than usual, allowing the pass rate to be unaffected by this circumstance
- We adjust the passmark upwards if there is evidence that we have set a slightly less demanding exam than usual, allowing the pass rate to be unaffected by this circumstance
- Where the standard appears to be very similar to previous years, we maintain similar grade boundaries
- An exam paper at a particular level in a subject in one year tends to have a marginally different set of grade boundaries from exam papers in that subject at that level in other years. This is because the particular questions are different. This is also the case for exams set in centres. And just because SQA has altered a boundary in a particular year in say Higher Chemistry does not mean that centres should necessarily alter boundaries in their prelim exam in Higher Chemistry. The two are not that closely related as they do not contain identical questions
- Our main aim is to be fair to candidates across all subjects and all levels and maintain standards across the years, even as syllabuses evolve and change

Comments on grade boundaries for each subject area

The pass mark was raised by just over 1% (from 51/110 to 62/130) to reflect the extra 20 marks which mainly targeted at the C grade candidate.

Comments on candidate performance

General comments

The overall performance continues to be satisfactory, although concerns still remain about the number of arithmetical errors being made.

Whilst the average response to all questions was satisfactory, many candidates made quite a poor start to each paper.

The number of candidates taking the statistics option has fallen to 49 with approximately half of them passing.

Areas of external assessment in which candidates performed well

Polynomials (Paper 1 Question 2) was well done but interpretation of the result was poor.

Differentiation using the chain rule (Paper 1 Question 6), vectors (Paper 2 Question 2), wave function (Paper 2 Question 6) and the start of circles/Tangents (Paper 2 Question 8) were all well done by many candidates — average response earned 80% of the marks.

There were no questions where the average response fell below 31%.

Areas of external assessment in which candidates had difficulty

Gradients of straight lines (Paper 1 Question 1 and Paper 2 Question 1) had a poor response, with candidates only earning on average, about 60% of the marks.

Trig equations (Paper 1 Question 3) was very badly done by most candidates.

In Paper 2 Question 8 (circles) there was a surprisingly poor response to part (b) — tangency — after most candidates achieved a successful start in part (a).

Whilst many candidates found the proof difficult in optimisation questions (Paper 2 Question 9), the attempts at part (b) were very poor with an average mark of only 44%.

Recommendations

Feedback to centres

Areas which give cause for concern are:

Optimisation problems — inability to recognise that it is simply equivalent to finding the maximum/minimum of a function.

Trig equations — inability to extract more than one solution.

Linear equations — inability to re-arrange and identify the gradient.