

Principal Assessor Report 2005

Assessment Panel:

Mathematics

Qualification area

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

Applied Mathematics Advanced Higher

Statistical information: update

Number of resulted entries in 2004	234
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Number of resulted entries in 2005	314
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General comments re resulted entry numbers

The increase is very pleasing. The entry in 2005 is very similar to the 319 in 2003.
The breakdown of candidates between the three papers (at the passmark stage) was:

Statistics	165
Mechanics	147
Num An	1

The number of candidates entered for both AH maths and AH Applied Maths (at passmark stage) was extracted:

	AH Applied Maths: Statistics	AH Applied Maths: Mechanics	AH Applied Maths: Num An
AH Maths & AH Applied Maths	59	77	0
AH Applied Maths only	106	70	1

(2,170 candidates were entered for AH Maths only.)

Statistical Information: Performance of candidates

Distribution of awards including grade boundaries

Distribution of awards	%	Cum %	Number of candidates	Lowest mark
Maximum Mark- 100	-	-	-	-
A	37.3	37.3	117	71
B	18.8	56.1	59	60
C	16.6	72.6	52	50
D	6.1	78.7	19	45
No award	21.3	100.0	67	-

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 arrangements evolve and change.

Comments on any significant changes in distribution of awards/grade boundaries

The proportion obtaining an A (pre-appeal) was 33.8% in 2004 so there has been an increase. The proportion obtaining a C or better (pre-appeal) in 2004 was 67.9% so there has been a slight increase in 2005.

2005 is the first year where all candidates have had to do the new mathematics unit alongside their choice of specialism. This new format meant that it has been possible (at the passmark stage) to make valid comparisons of those taking Statistics and those taking Mechanics.

	Number of candidates	Section A (average mark)	Section B (average mark)	Total (average mark)
Mechanics	147	43.67	19.91	63.59
Statistics	165	39.22	18.70	57.92

On the evidence of Section B, those taking Mechanics were slightly better. This is reflected in the Section A marks. There seems nothing here to suggest any difference in difficulty between the Mechanics questions and the Statistics questions.

Comments on candidate performance

General comments

With an overall mean of 61%, clearly the performance of most candidates was entirely satisfactory. The table below shows the number of candidates for different mark ranges:

0 to 20	21 to 40	41 to 60	61 to 80	81 to 100
17	39	86	110	61

One candidate got 100% and three got 99%. At the other end, the lowest mark was 9 and there was also a mark of 10.

Areas of external assessment in which candidates performed well

Given the composite nature of the assessment, comments are restricted to Section B.

Differentiation was done well as was the question on parametric equations. Some candidates did well on the last question (on differential equations).

Areas of external assessment in which candidates had difficulty

It was extremely disappointing to see a significant number who could not correctly set up the partial fractions and the large number of those who did who proceeded to get lost subsequently.

Many were very poor at setting out answers.

Recommendations

Feedback to centres

Given that 2005 was the first year of the new style paper, centres and candidates are to be congratulated on their overall good performance. The average mark on the 'new' section B was 19 (out of a possible 32). The one question in Section B which was done *surprisingly* badly was the one on partial fractions. Many candidates seemed unable to set up the initial fractions and often when that was done, candidates went wrong later.

The specialist sections produced average marks which were very close together, indicating that they were equally difficult. The performance of candidates in Section B (common to all three Question Papers) may indicate that the Mechanics candidates were slightly more able mathematically and explain the difference (4 marks) in performance in Section A.

My advice is to keep up the good work and take a look at the solutions provided. In addition, you may wish to emphasise to future candidates that they risk failing to gain marks if they submit illegible work.