

Principal Assessor Report 2003

Assessment Panel:

Mathematics

Qualification area:

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

Mathematics Higher

Statistical information: update

Number of entries in 2002	19900
Pre appeal	19821

Number of entries in 2003	
Pre appeal	19794

General comments re entry numbers

There is no significant change in candidate numbers.

Grade boundaries at C, B and A for each subject area included in the report

(Pre Appeal)

Distribution of Awards	%	Cumulative %	Number of Candidates	Lowest Mark
Upper A	7.7	7.7	1,517	94
Lower A	11.9	19.5	2,347	83
B	22.9	42.5	4,540	67
C	24.1	66.6	4,777	51
No Award	33.4	100.0	6,613	
Total			19,794	

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 remained the same as the examination was deemed equivalent at the C-interface as the previous year. The increase in the marks required for an A and a B reflected the slight easing of the questions designated to target the prospective B-grade and A-grade candidates.

Comments on candidate performance

General comments

The overall performance was satisfactory by the number of arithmetical errors seems to be on the increase.

Areas of external assessment in which candidates performed well

Candidates performed well in Paper 1: straight line geometry (Question 1), basic calculus (Questions 5 and 8), composite functions (Question 9) and Paper 2: factorising a cubic (Question 1), interpreting a trig. Graph (Question 2), area between two curves (Question 3), tangent to a curve (Question 4) and basic interpretation of a wave function (Question 7).

Areas of external assessment in which candidates had difficulty

Paper 1:

Question 2	sketching a parabola
Question 4	the inability to form two equations using the recurrence relation information
Question 5	evaluating the derivative
Question 7	unable to handle quadratics which do not factorise
Question 8	evaluating the integration
Question 10	the use of the double angle formulae
Question 11	the use of the general equation of a parabola
Question 12	remembering the laws of logarithms.

Paper 2:

Question 3	incorrect formulae used for the area between two curves
Question 6	evaluation of the derivative
Question 7	solving a linear trig. equation in (b)
Question 8	the proof in (a)
Question 10	the use of the double angle formulae
Question 11	the sketching of exponential graphs.

In the statistics questions:

- distinguishing between discrete probability functions and continuous probability functions
- finding the probability distribution function from the cumulative distribution function and vice versa
- calculations of probabilities

In all paper, basic arithmetic calculations were rather poor.

Recommendations

Feedback to centres

The three areas which showed an alarming decrease in standards were:

- work related to the parabola
- trigonometry, especially use of double angle formulae
- general arithmetic calculations.

Candidates should be advised:

- to work in pen
- not to cross out an attempt until a replacement attempt has been written down
- to double check that they have copied down equations and other information correctly from the question paper.