

Principal Assessor Report 2004

Assessment Panel:

Mathematics

Qualification area

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

**Mathematics
Standard Grade**

Statistical information: update

Number of entries in 2003	59431
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Number of entries in 2004 (pre-Appeal)	56767
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General comments re entry numbers

The reduction of entries within a relatively stable population was noted. Some research on possible alternative routes chosen would be of interest.

Statistical Information: Performance of candidates

Distribution of awards (pre-Appeal)

Grade	%	Cum. %	No. of Cands.
1	18.0	18.0	10210
2	14.0	32.0	7921
3	21.4	53.4	12131
4	16.8	70.2	9513
5	19.7	89.9	11197
6	7.9	97.8	4512
7	2.2	100.0	1224
No award	0.0	100.0	<u>59</u>
		Total	56767

Distribution of awards – Elements (pre-Appeal data)

Knowledge & Understanding

Grade	%	Cum. %	No. of Cands.	Lowest mark
1	17.0	17.0	9625	31
2	15.7	32.7	8899	20
3	18.0	50.7	10196	27
4	17.4	68.1	9898	20
5	20.1	88.2	11418	25
6	8.4	96.6	4749	17
7	3.4	100.0	1951	
No award	0.0	100.0	<u>31</u>	
			56767	

Reasoning & Enquiry

Grade	%	Cum. %	No. of Cands.	Lowest mark
1	13.7	13.7	7759	32
2	12.2	25.9	6898	21
3	20.5	46.4	11654	31
4	20.4	66.8	11561	22
5	16.9	83.7	9619	28
6	11.7	95.4	6635	18
7	4.6	100.0	2613	
No award	0.0	100.0	<u>28</u>	
			56767	

Comments on any significant changes in percentages or distribution of awards

The KU distribution is consistent with 2003. However, in RE, there is a slight percentage increase in the number of candidates gaining Grades 1 and 2. General and Foundation awards are consistent with 2003. Possible reasons for this slight change will be considered within the general comments.

Grade boundaries for each subject area included in the report

Standard Grade Assessable Element – 2501			
Grade	Maximum Mark	Minimum Mark for Grade	% Mark
1	45	31	68.9
2		20	44.4
3	38	27	71.1
4		20	52.6
5	39	25	64.1
6		17	43.6

Standard Grade Assessable Element – 2502			
Grade	Maximum Mark	Minimum Mark for Grade	% Mark
1	45	32	71.1
2		21	46.7
3	42	31	73.8
4		22	52.4
5	41	28	68.3
6		18	43.9

Comments on grade boundaries for each subject area

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Comments on candidate performance

General comments

Foundation:

Candidates' overall responses were good. The papers allowed the candidates to show their skills, with most candidates able to attempt every question. Non calculator skills continue to improve although a small minority of candidates were disadvantaged as their responses in Paper 2 showed that they were working without access to a calculator.

The RE element has improved with marks this year almost equivalent to the usually more accessible KU marks.

There were very few extremely poor papers.

General:

Again the overall responses were good. The paper was seen as well balanced with interesting current contexts which were familiar to candidates.

The RE element had improved and in some cases surpassed the KU element. This was particularly pleasing, as the team had worked hard to allow students to access this more challenging element. Areas of proven competence for the prepared General candidate (Pythagoras, trigonometry) were placed in a reasoning context. Not all candidates, of course, did these questions well but many were able to demonstrate their knowledge within the often more demanding RE context.

As in previous years, candidates' non calculator skills varied greatly.

Credit:

The increase in marks available (now 90) allowed for greater opportunities for partial marks to be awarded, a problem identified in 2003. With an increase of 6 RE marks in the paper, there was a deliberate attempt made to make the RE element more accessible whilst sustaining the KU marks.

Subsequently, at both Grade 1 and 2 in the RE element, there was an increase in the number of successful candidates. For both KU and RE elements, the increased number of marks in the paper appeared most beneficial to Grade 2 candidates.

The paper was deemed a fair testing for prepared Credit candidates, giving opportunity to display a variety of their mathematical skills.

As indicated last year, some candidates –possibly very good General students- were presented for the Credit exam with only a limited knowledge of Credit work. Results were invariably disappointing.

As in previous years, the papers ranged from excellent to very poor.

Areas of external assessment in which candidates performed well

Foundation:

Paper 1 was very well done with candidates now ensuring working is shown. Questions 1-3 (8KU marks) were extremely well done.

Questions 5,6 and 8 were well done.

This paper proved accessible, in both KU and RE, for reasonably prepared candidates.

Paper 2 proved more challenging and gave a greater variation in responses.

Questions 4 and 10 were very well done.

Questions 3,7, 8(a) and 13 were well done.

General:

In Paper 1, Questions 3, 5, 8, 10 and 11 were all well done.

In Paper 2, Question 7, the first involving Euros, Question 9 (TV packages) and Question 10 on holidays were very well done. Candidates were familiar with these contexts and were able to show their skills and gain high marks.

Algebra skills demonstrated in Question 4 are improving.

Credit:

In Paper 1, Questions 1,3 and 7 were very well done.

Question 8 was reasonably well done.

Paper 2 produced a greater number of high scoring questions. Question 1, the scientific notation, is now done very well.

Question 3, the calculation of mean and standard deviation is also well done by most candidates.

An increasing number of candidates are now successfully accomplishing the familiar 'appreciation' question, number 4, by the more economical method.

The trigonometry content of Questions 5,6 and 7 (9RE and 8KU) allowed high marks to be obtained by many candidates.

Questions 9 and 10 were reasonably well attempted.

Areas of external assessment in which candidates had difficulty

Foundation:

Paper 1

As in previous years, there were various responses for the number of millilitres in a litre (Question 4).

The pie chart in Question 7 indicated confusion over the use of degrees and the use of percentages in the construction of a pie chart.

Paper 2

This was the paper in which some candidates did not have access to a calculator. Thus disadvantaged, they found difficulty completing the calculations in certain questions although partial marks were awarded when appropriate working was shown.

Question 6 produced confusion over area and perimeter.

The difficulty in Question 7 was in converting 250 seconds into minutes and seconds: an ongoing difficulty with time concepts.

Question 11(b) indicated difficulties in special awareness.

General:

Paper 1

Question 1(a) – order of operations was not particularly well done with the add part being carried out inappropriately.

Question 2 was extremely poorly done, probably the worst in the whole paper. There was a widespread lack of knowledge of conversion of a fraction (whose denominator was not 10 or 100) into a decimal. Many ingenious efforts were seen.

Question 9 produced a variety of strategies and solutions indicating some confusion on the concept of proportion.

Paper 2

Question 1 was not well done. As with Foundation candidates, there was a lack of understanding of the use of degrees and percentages (or fractions) in the construction of a pie chart.

Question 2 showed candidates who could complete the frequency table but lacked the understanding of how to use the table to calculate the mean.

In Question 13, many candidates gained 1 out of 2. Surprisingly, candidates whose previous responses had not been particularly impressive could give extremely accurate solutions.

Credit:

Paper 1

Questions 2 and 4-arithmetic and algebraic fractions- were not particularly well done.

Question 6- 'reverse' percentage-is a common Credit question but there was a widespread lack of understanding of the appropriate strategy.

Question 10 indicated a lack of understanding of the relationship $y = ax + b$

The proof in Question 12 was not well done.

Paper 2

Questions 2 (b), 8 and 11 (a) –another proof- were the most challenging for candidates.

Recommendations

Feedback to centres

Centres should be congratulated on the ever-improving clarity with which candidates are responding to the examination questions. This is beneficial to candidates' understanding and results.

Areas in which improvements could be made are highlighted in the previous section.

There remain concerns however on the presentation of ill prepared candidates. Scrutiny of such scripts indicates that for these candidates the experience of the examination could not have given them any confidence in a positive result.