Summary of Examiners' Reports for NST Maths 1A and 1B
2014

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This report provides a summary of some of the main points made in the Examiners' reports (attached) and provides some commentary following a meeting of the NST Mathematics Teaching Committee held on Friday 31 October 2014, at which the reports were discussed.

NST Mathematics 1A

There was a total of 502 students who took this examination, comprising 422 NST students, 76 CST students and 4 EDP candidates. Additionally, 7 NST students and 2 CST students withdrew. Last year there were 509 students, comprising 432 NST and 77 CST. The previous year the figures were 489, 429 and 60 respectively. It is pleasing to note that there were no reports of misconduct or of any mistakes in the examination papers.

The median raw mark (out of 240) had climbed steadily between 2008 and 2012 from 131 to 182 but reduced significantly last year to 150. This year the median rose a little to 160:

2008	2009	2010	2011	2012	2013	2014
131	140	162	170	182	150	160

The examiners last year noted that it had been their intention to make the examination slightly more difficult than in previous years and to balance the difficulty of the two papers. It is noted this year that students scored significantly lower on Paper 1, with a median mark of 74, than on Paper 2, with a median mark of 86.

It is noted that, as usual, there were significantly fewer than average attempts at starred questions (which involve material taught in the B course but not in the A). This is not thought to be a concern: the B-course material is educational for those students who can cope with it but those same students can reasonably adopt an examination strategy that avoids it. There is an average of more than 40 attempts at these questions, so they are providing opportunities for a significant number of students.

Last year it was agreed that assessors could be used to mark Section B questions provided that: each question is marked consistently by one person; that assessors should not depart from the marking scheme without consultation with the responsible examiner and that all assessors should be approved in advance by the Faculty Board no later than the end of the Lent Term. Three assessors (all from DAMTP) were used this year to very good effect.

An appeal from a student resulted in an investigation of the mark-processing program, which revealed an error that had resulted in 16 of the 511 candidates being awarded

incorrect scaled marks. The error was rectified and the correct scaled marks were communicated to the student registry. We received an additional report from the Computer Officers detailing the nature of the error and identifying a significant number of students whose marks had been affected in 2011 and 2013. The Head of Department communicated this to the Education Office. It is hoped that affected transcripts can be updated.

The examiners provide (paragraph 14) a list of recommendations. We note the comment in subparagraph (4) that Section A scripts take a long time to mark and that it would be helpful to have an additional checker on standby in case of delay. We also note the difficulty that some students had in the Sports Centre seeing a clock or the notices of corrections, which can hopefully be rectified next year.

NST Mathematics 1B

The examination was taken by 166 students (163 last year, 169 the year before). There was one amendment made to one of the papers prior to the start of the examination but were no incidents and no major questions from the students during the examination.

There is comment that some students were unaware that they **could** use approved calculators [perhaps because calculators are no longer allowed in the 1A papers]. The Teaching Committee noted that calculators are not required for any question so it would be most straightforward to continue the practice from 1A and indicate explicitly on the examination papers that calculators are **not** allowed.

Following recommendations from last year's examiners and with strong endorsement from the Teaching Committee, this year each examiner checked all problems without the aid of solutions. The Examiners indicate that this was very good practice, which they encourage to be continued.

Examiners are given target distributions of class assignments but "the Senior Examiner may submit marks outside these limits if they are justified by the cohort performance at 1A." The mechanism for ensuring this is that a check on the cohort performance is made **after** class boundaries have been proposed and individual cases discussed. The tendency seems to be to set provisional class boundaries based on the targets and then to discover that they are well inside the cohort-tracking data. The Teaching Committee recommends that Examiners be reminded that those taking Mathematics in NST 1B are typically strong and that they be invited to consider setting draft class boundaries accordingly. This could be done incrementally over a few years.