

19/09/2016

To whom it may concern

A number of concerns have been raised from our members over the recent MCAT paper. As an association we feel that it is imperative that these concerns are expressed. The OMA feels extremely disappointed with the paper that was sat on Tuesday 13th September. The OMA is also disappointed with Paper 2 which was sat on Thursday 15th September.

The papers did not resemble any papers that have previously been sat by our students and there was no correspondence to indicate that changes were going to be made to the format and style of the questions. One of our key questions centres around the understanding that this exam is calculator free, is it not therefore the point of this assessment to assess students' algebra skills? A suggestion from the committee is that "Solve Problems" could actually be "ALGEBRA Problems".

In particular, the OMA has objections to the following questions:

Question 1b: very confusing situation for students to write and solve a pair of simultaneous equations.

Question 1d: does not address the standard AS91027, as it states "solving simple equations involving exponents such as $x^3 = 8$, $5^x = 125$ " Question 1d sits at Level 2 with skills from AS91261.

Question 2b: Is well beyond the scope of AS91027 – there is no reference in the standard to solving quadratic inequalities. The only references in the standard relating to inequalities states "solving linear equations or inequations such as $5x + 12 = 3 - 2x$ or $3(x - 2) < 7$ ", and the reference to quadratics states "solving quadratic equations such as $(8x + 3)(x - 6) = 0$, $x^2 + 5x - 6 = 0$, $3x^2 = 10x - 8$." The fact that students could choose two alternative ways to solve this problem resulting in two completely different answers (one solution is that the inequation cannot be solved) is in the view of the OMA irresponsible.

Question 2c: This question is also well beyond the scope of AS91027 – the standard states "simplifying algebraic expressions involving exponents, such as $(2x^4)^3$ or to solve $4x2^x = 2^{6x+3}$ is well beyond curriculum level 6.

Question 2e: To have an irrational solution to a quadratic is outside the scope of this AS – especially when students are required to NOT use a calculator. It should also be noted that this question very closely resembles question 2(b)(ii) from the AS 91258 exam in 2014 – however significantly more challenging

Question 2fi: This question does not address any part of the standard.

Question 2fii: We have no problem with the algebra behind this question, but asking students for a percentage is not a part of Standard AS 91027. This skill sits within AS91026.

Question 3ai: This is a very obtuse way of instructing students to factorise a quadratic.

Question 3di: There is no way to answer this question in an algebraic way – the front cover of the examination paper states that, "You are required to show algebraic working..." and "Where a question is given in words you will be expected to write an equation."

Question 3dii: This question seems far more appropriate for AS91028, rather than AS91027

The OMA wishes to express strongly that this examination was a very poor assessment task, particularly in terms of being able to ascertain the relative ability of the current Year 11 cohort in AS91027 on a National scale. We are concerned at the direction this standard is heading in, and we require much more communication of NZQA's intentions regarding the style of assessment for AS91027. The OMA also wishes to express that this current push for awkward context that is fabricated for the purpose of the exam is not needed!

The OMA feels that the unexpected nature of this assessment will only deter students from wanting to carry on Mathematics in further years. It is now likely that students heading into other examinations will not have the confidence that what they have "in front of them" is going to test them on what they know. Should we not be trying to encourage our students to carry on with Mathematics?

To imply that every Maths teacher throughout the country is at fault for underpreparing students for the exam is mischievous at best and grossly damaging to the profession. As a profession we are guided by the standard including explanatory notes, previous year's assessments, clarification of the standards and exemplars of students' work, all of which are provided by NZQA. It is not the place of the examiner to write the standard or define the curriculum. This is done in the standard itself and the in senior teaching and learning guides. If all standards are to change to come into alignment with the recent MCAT will NZQA be providing the appropriate professional development to support our teachers? Teaching blind is not the way forward! The OMA wonders if NZQA's agenda is to dissuade students from entering external examinations. Poor assessment experiences, such as those had by N.Z. Maths students on Tuesday and Thursday this week, will undoubtedly drive students to seek Internal Assessment opportunities over External Assessments. Should this play out, Maths teachers' work-loads will further increase in an already undesirable and dwindling profession.

Regards
Otago Mathematics Association