Email to Sue Chalmers – 22 September 2016

Dear Ms Chalmers

I am disturbed by the changing assessment specifications being used to reinterpret and largely change the MCAT standard when the standard has not been rewritten.

The Level **2** Algebra exam assesses algebra skills. While many of the problems have sort of real-life context, the questions do actually say "simplify", "factorise", "solve" etc.

There is nothing in the STANDARD document that suggests that solving problems always means "problem-solving" in the loose, lateral thinking sense. In fact, the standard specifically states that the problems can be MATHS problems. The definition of "problems" is IDENTICAL for the two standards.

L1 MCAT Standard	L2 Algebra Standard
Title Apply algebraic procedures in solving problems	Title Apply algebraic methods in solving problems
From Standard document Problems are situations that provide opportunities to apply knowledge or understanding of mathematical concepts and procedures and methods. The situation will be set in a real-life or mathematical context.	**From Standard document** Problems are situations that provide opportunities to apply knowledge or understanding of mathematical concepts and methods. Situations will be set in real-life or mathematical contexts.
Assessment specifications document An ENORMOUS amount of content, including To meet the requirement of the standard with respect to solving problems, candidates will not be able to provide evidence by following a direction to solve factorised quadratics, factorise, expand, write or solve a linear equation, or simplify an expression involving the collection of like terms in response to being told to. No part of any question will direct the candidate to perform a specific procedure unless there is an intermediary procedure required in order to solve a problem.	**Assessment specifications document** Only reference to non-algebraic context questions : "Any equations formed by the candidate must be stated in solving a problem." "Given the form of a model, the candidates may be required to complete the model using the information given in the context of the question. "Clarifications" are very short and actually clarify some points of algebra.

The redefining of what "solving problems" means has not been done through a rewriting of the standard. Rather, the large amount of "assessment specifications" have changed the whole nature of the assessment and the standard has therefore effectively been rewritten by the examiner, something that surely exceeds their jurisdiction. Of concern is the comment in the assessment specifications that in Level 1 Algebra "no part of any question will direct the candidate to perform a specific procedure". The Level 2 examiner introduces no such conceit and the instructions are clear. Note all the process words in the Level 2 exam from last year....

2015 Level 2 exam questions

(a) (i) Find the value of $\log_2 1024$.

(ii) Solve the equation $\log_4(3w+1)=2$.

(b) Make x the subject of the equation $a^{2x}=b^{x+1}$.

(a) Simplify $\dfrac{2x^2+7x-4}{2x^2-32}$

(b) Solve the following equation for t:

$$\frac{1}{t(t-1)}-\frac{1}{t}=\frac{3}{t-1}$$

(b) If $a=y^{\frac{3}{4}}$, find an expression for a^7 in terms of y.

The standard is not a problem. The power given to one person to change the entire nature of the standard (and write vague exams where algebra is not the main focus) is.

Regards,

Claire Laverty

Response from Sue Chalmers – 22 September 2016

Dear Claire Laverty,

Thank you for taking the time to draw my attention to an issue you perceive in how the two algebra standards have been interpreted and assessed. I will take this to our examination development teams and get back to you as soon as I can.

Kind regards
Sue