

## Otaki College was sent a response from NZQA about the MCAT...

Two people far cleverer than me have come up with these analogies...

"I initially likened the assessment to going full driver's licence. rocking up and being given a 16 wheeler truck to drive"

"In PE a CL4 skill could be riding a bike and standing on your head a CL5 skill. Also juggling could be a CL5 skill. So that means students should be able to stand on their head and juggle while riding a bike for NCEA Level 1"

### Response from Sue Chalmers, Manager Secondary Examinations:

Thank you for your email regarding the MCAT paper 91027 for Tuesday 13/09/2016.

As indicated in the assessment specifications in 2015 and 2016, the standard is about problem solving and the need for selecting and combining individual skills. The questions in the MCAT reflect this in that students are not told which algebraic procedure to carry out. At higher grade levels students must combine methods in order to solve problems.

You have raised a number of specific points, and I would like to address these, outlining the way that those questions can be related to the standard and curriculum level.

1. Question 1d This is an excellence level question. It involves-

- Recognizing  $4 = 2^2$  This is curriculum level 4
- Knowing to add the indices when they multiply terms in algebraic expressions. This is curriculum level 4
- Solving an equation  $2 + x = 6x + 3$  This is curriculum level 5

Problem solving, which is what the standard is about, combines the skills. It is an excellence level question requiring thinking.

This is related to the curriculum achievement objective NA 6-5, which states: "form and solve linear equations and inequations, quadratic and simple exponential equations, and simultaneous equations with two unknowns".

In the indicators (notes that form part of the achievement objectives), it also states "Uses algebraic manipulation skills to simplify expressions, including rational expressions involving exponents".

2. Question 2b - when expanded the expression reduces to a linear equation. It involves a combination of skills

3. Question 2c Solving a linear equation in a problem-solving situation may first require manipulation to reduce it to a linear form. The manipulation is part of the achievement standard.

4. Question 1(a)(ii) This has quite open wording in order to invite candidates to investigate the situation without being given specific direction. This is in line with EN2 of the standard: "Apply algebraic procedures involves: Selecting and using procedures in solving problems". The 2016 Assessment Specifications note the following "In any of the level 1 external assessments, candidates may be expected to demonstrate evidence through a simple investigation. This may involve the investigation of an algebraic, statistical, or geometric relationship, and begin with a word problem or situation." <http://www.nzqa.govt.nz/qualifications-standards/qualifications/ncea/subjects/assessment-specifications/mathematics-l1/>

Thank you for the comments you have sent us. I hope that this response is helpful to you. If you have further concerns, please contact me.