THE OWLET

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COMPREHENSION, COMPUTATION AND COMMUNICATION

The three mathematical subjects taken at Unit 3 and 4 level in VCE, namely General Mathematics, Mathematical Methods and Specialist Mathematics place a lot of emphasis on analysis and interpretation, which can be seen in the SACs and external assessments. The extended response questions require students to comprehend the problem, make use of available knowledge to compute the solution and communicate their solution in the context of the problem.

The initial process when coming across a multi-step problem is to comprehend the data well and extract relevant information to solve the problem. It is important to have an open mind about the problem and not rush to associate it with a previously encountered question. Even if it looks familiar to a past question, this can lead to an incorrect approach. The problem can include worded statements, diagrams, tables or graphs or a combination of the above. It's a good idea to read about the problem and all its parts to have an overall idea of what the question involves. Students should then annotate the statements and fill in the missing pieces of information in the diagrams or graphs and highlight relevant information. While annotating and filling in missing information, ideas on how to solve the problem might naturally come to mind. This also provides time to think about the possible ways to solve the problem before using the writing space. Often there is more than one way to solve the problem. Coming up with the most efficient way to solve it will save time, space and the need to cross it out and redo an answer.

The next step is to compute the answer. The marking guide and the instructions give clues as to how much needs to be written to obtain all the available marks. Generally, the 'show' questions will require the students to show all the necessary working steps. As all the necessary steps need to be taken, making use of the available space is key. If the CAS calculator is allowed, how to use it across the different applications for the problem can play a big role in how much time can be saved. Even if the calculator can be used, some steps need to be shown to obtain the marks. Some problems will need to be broken into smaller parts and each individual part needs to be solved before working out the final answer. Learning to use the formula sheet given and checking with the notes can provide a chance to check as to how relevant formulas and methods are used well. Having a rough idea as to whether the answers are in the right ballpark is crucial as this will help with a rough check as to whether an answer is correct. In the VCE marking scheme there are no half marks awarded. Therefore, making sure what needs to be included to obtain one mark needs to be decided upon.

Often the examiner wants to find out how well students have understood the problem by asking them to explain their answer. In these questions, students will be required to write a sentence or two to show their understanding of what it means to get a number as their answer. A typical question in General Mathematics might ask a student to, for example, interpret the slope or the y intercept of an equation. For Maths Methods, a typical question could ask why a maximum or minimum value cannot exceed a certain value for all x values. While working on exercises from the textbook or any other resource, it's important to ask questions and think about how the question can be modified or what other possibilities there are. In this way, the learning becomes deeper and the ability to explain improves.