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# Level 3 Technical Level

## IT: PROGRAMMING

Unit 5 Mathematics for programmers  
H/507/6469  
Report on the Examination

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Students showed a much better range of knowledge than in previous series and were able to gain marks at different stages of questions. This was most evident in Section B where despite not understanding sample points, most were able to pick up marks in different areas of Question 18 on probability.

Some struggled to provide straightforward definitions of iteration or types of sets, and the question which asked students to shade the area of the Venn diagram represented by union and intersection operators was poorly answered.

One common error was to realise that a bit pattern of, for example, 1111 represents a maximum of 31 and 11111111 a maximum of 255, but then to overlook that this is 0 to 31 and 0 to 255, therefore 32 and 256 possible hosts, registers available etc. This is a theme that could also be relevant in the first year Computer Programming unit, for example, in the manipulation of arrays.

It is important for students to show their working as this can yield some marks even when the final answer is wrong. A number of students gave the wrong answer to a question and lost all marks, whereas those who gave the wrong answer but showed some working often picked up marks for creditable parts of their process.

Question 15.1 caused the most difficulty. This is very much in line with past series, where questions involving mathematical commands such as 'show' and 'prove' have often not been well handled by students.