

CS-603 Mathematical Concepts in Computer Science

Assignment-2(03-Sep-2009)

Department of Computer Science and Engineering, Indian Institute of Technology Madras.

1. (2 marks) Verify whether the following argument is valid or not using resolution principle. If Cliftan does not live in france then he does not speak french. Cliftan does not drive a datsum. If Cliftan lives in france then he rides a bicycle. Cliftan speaks french or he drives a datasum. Hence Cliftan rides a bicycle.
2. (1 mark) $4^{n+1} + 5^{2n-1}$ is divisible by 21 for all $n \geq 1$
3. (2 marks) $(x - y)$ is factor of $(x^n - y^n)$ for all $n \geq 1$

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