

1993 Paper 13 Question 11

Complexity Theory

Explain the relationship between integer and polynomial multiplication. [2 marks]

Show how the latter can be reduced to an interpolation problem which can be solved by matrix multiplication. [4 marks]

Starting from this idea, outline an efficient algorithm for forming the product of two n -bit unsigned integers. [12 marks]

What is the cost of the algorithm that you have described? [2 marks]