

## 1997 Paper 13 Question 12

### Complexity Theory

Suppose you had a conventional sequential computer with a special coprocessor which could multiply two  $n$ -bit numbers in time proportional to  $\log(n)$ , even for very large  $n$ . Explain how you would implement a fast integer square root program on this system. Comment on the performance you could expect to achieve.

[20 marks]