

2000 Paper 5 Question 5

Comparative Programming Languages

Outline how you would implement complex numbers in C++. Your implementation should attempt to make complex numbers look as if they were built into the language by allowing new complex numbers to be declared, initialised, assigned and operated on by the normal arithmetic operators. [13 marks]

Discuss to what extent a good C++ compiler could implement your version of complex numbers as efficiently as if they had been a primitive type in the language. [7 marks]