

# Problem C

## Himeno Benchmark

The Himeno benchmark was developed by Dr. Ryutaro Himeno in 1996 at the RIKEN Institute in Japan. It is highly memory intensive, bound by memory bandwidth on modern processors, in contrast to the highly compute intensive Linpack.

The Himeno benchmark focuses on the solution of a 3D Poisson equation in generalized coordinates on a structured curvilinear mesh. With the processing time dominated by the Poisson solution, it makes the Poisson procedure a good measure of overall performance. Using finite differences, the Poisson equation is discretized in space yielding a 19-point stencil.

Your task is to improve performance of the source-code using parallel strategies.

### Input

The input file contains only one test case. The first three lines contain the size of a matrix  $imax$ ,  $jmax$  and  $kmax$  ( $0 < N \leq 10^4$ ). Next,  $nn$  is the number of iterations.

*The input must be read from the standard input.*

### Output

The output must be the *Gosa number* that is the residual to measure convergence. It must have 6 (six) digits of precision.

*The output must be written from the standard input.*

### Example

Input	Output
64	0.003068
64	
128	
10	