Problem C

Mandelbrot Set

The Mandelbrot set is the set of complex numbers *c* for which the function $f_c(Z) = Z^2 + c$ does not diverge when iterated from $Z = 0$, i.e., for which the sequence $f_c(0)$, $f_c(f_c(0))$, *etc.*, remains bounded in absolute value. Its definition and name are due to Adrien Douady, in tribute to the mathematician Benoit Mandelbrot. The set is connected to a Julia set, and related Julia sets produce similarly complex fractal shapes. The Mandelbrot set is the set of values of *c* in the complex plane for which the orbit of *0* under iteration of the quadratic map

$$Z_{n+1} = Z_n^2 + c$$

remains bounded. That is, a complex number *c* is part of the Mandelbrot set if, when starting with $Z_0 = 0$ and applying the iteration repeatedly, the absolute value of Z_n remains bounded however large *n* gets.[2]

Create a parallel version of the given sequential algorithm[3] that generates a textual approach for the Mandelbrot set.

Input

The first line informs the maximum number of rows. The second line presents the maximum number of columns. Finally, the last one informs the number of iterations.

The input must be read from the standard input.

Output

Textual representation of the Mandelbrot set.

The output must be written to the standard output.

[2] Text from Wikipedia: https://en.wikipedia.org/wiki/Mandelbrot_set

[3] Code adapted from http://www.fractalforums.com/programming/mandelbrot-with-only-18-lines-of-cplusplus-code!/

Example

Input	Output for the input
23 79 24