Game Show

Statement

Fluffy the Hamster is a contestant on a game show! The game Fluffy is currently playing has a R by C grid of tiles. Each tile has a dollar amount of prize money written on it, in particular, the tile at (i, j) has $\$P_{ij}$.

To win some money, Fluffy has to select *at least* T tiles in the grid. The selected tiles must form either a square or a rectangle. The amount of money Fluffy wins is the smallest dollar amount written on the tiles that were selected. Help Fluffy compute what is the maximum amount of money he can win!

Constraints

- $1 \leq R, C \leq 10^3$
- $1 \leq P_{ij} \leq 10^9$.

Input

The first line of the input contains 3 integers R, C and T.

The next R lines contains C space separated integers each, the values of P_{ij}.

Output

Print a single integer, the maximum amount of money Fluffy can win.

Examples

Sample Input	Expected Output
4 4 4 5 3 4 2 2 4 1 3 3 2 3 5 4 1 6 3	3

In the example above, by selecting the highlighted tiles, Fluffy can win $3.

5	3	4	2
2	4	1	3
3	2	3	5
4	1	6	3

Notes

1. A skeleton file has been given to help you. You should not create a new file or rename the file provided. You should develop your program using this skeleton file.
2. You are free to define your own helper methods and classes (or remove existing ones) if it is suitable but you must put all the new classes, if any, in the same skeleton file provided.

Skeleton File

You are given the skeleton file `GameShow.java`. You should see the following contents when you open the file:

```
/**
 * Name          :
 * Matric. No    :
*/

import java.util.*;

public class GameShow {
    private void run() {
        // implement your "main" method here
    }

    public static void main(String args[]) {
        GameShow runner = new GameShow();
        runner.run();
    }
}
```