

ills

new game called Dropping Balls. Initially, Ansh has a grid a of size $n \times m$. Each cell (x, y) contains an integer $a(x, y)$ denoting the direction of how the ball will move

- the ball will move to the right (the next cell is $(x, y + 1)$);
- the ball will move to the bottom (the next cell is $(x + 1, y)$);
- the ball will move to the left (the next cell is $(x, y - 1)$).

a ball leaves a cell (x, y) , the integer $a(x, y)$ will change to 2. Ansh will drop k balls sequentially, each starting from the first row, and on the c_1, c_2, \dots, c_k -th ($1 \leq c_i \leq m$) in which column each ball will end up in (**position of the ball after leaving the grid**).

Input

The first line contains the number of testcases, T .

Each testcase:

The first line contains the number of rows and columns, n and m and the number k .

The next n lines contain the values of $a(x, y)$.

The last line contains k integers, the columns at which the i -th ball is dropped.

Sample Input

```
3
4 4 3
2 1 2 1
2 1 2 1
2 1 2 1
```

Sample output k integers — the i -th integer denoting the column where the i -th ball will end.

Sample Input 1

Sample Output 1

```
2 2 1
```

```
function solve(){  
    console.log()
```

```
runProgram=(input) =>{  
    nput=input.trim().split("\n")  
    / let
```

```
olve()
```

```
process.env.USER === "") {  
    nProgram(``);  
    se {  
        ocess.stdin.resume();  
        ocess.stdin.setEncoding("ascii");  
        t read = "";  
        ocess.stdin.on("data", function (input) {  
            read += input;  
        };  
        ocess.stdin.on("end", function () {  
            read = read.replace(/\n$/, "");  
            read = read.replace(/\n$/, "");  
            runProgram(read);  
        };  
        ocess.on("SIGINT", function () {  
            read = read.replace(/\n$/, "");  
            runProgram(read);  
            process.exit(0);  
        }  
    }  
};
```

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