Problem L
UTCS Maze

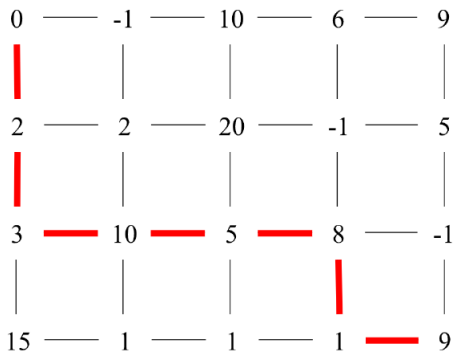
Time limit: **3 seconds**

Memory limit: **1024 megabytes**

Problem Description

There is a magic mountain in University of Taipei. In the magic mountain, there is a maze filled with monsters. Within the maze, one can only move downward or to the right. If someone violats this rule, it will transform this person into a monster. So far, no one can return safely. Bell is the strongest hero in the world. Bell has a special skill "Devour." This skill allows him to gain the ability points of any monster he defeats. Although Bell's skills are impressive, he still cannot defeat monsters with higher ability points than his own.

Today, Bell is preparing to enter the maze to hunt the monsters. Now, given the map of the maze, please help Bell to plan a route such that maximizes the ability points of Bell when he exits the maze. The entrance of the maze is located at the top left corner of the map, and the exit is at the bottom right corner. In the map, '-1' represents the walls, and the other numbers represent the ability points of each monster. The following image shows an example of a map with the red path indicating the route with the maximum ability points.



Input Format

Input consists of several test cases. The first line contains one positive integers, n, where n indicates the number of test cases. The first line of each test case contains two integers, N, M and K, where $N \times M$ represent the size of maze, and K represents the Bell's ability points. The following N lines, each line contains M integer numbers which represent the ability points of monsters. There is a space between two integers.

Output Format

For each test case, output the ability points of Bell when he exits the maze. If Bell cannot leave the maze, please output '-1'.

Technical Specification

- $n \leq 10$.
- $N \times M < 50,000,000$.
- $K < 10,000$.
- The ability point of each monster is not greater than 10000.

Sample Input 1

```
1
4 5 10
0 -1 10 6 9
2 2 20 -1 5
3 10 5 8 -1
15 1 1 1 9
```

Sample Output 1

```
48
```

Sample Input 2

```
6
1 5 10
10 20 40 80 160
1 5 10
1 2 1 2 -1
1 5 10
-1 1 1 1 1
1 5 10
20 1 1 1 1
5 5 10
3 5 -1 5 6
1 2 50 -1 4
10 20 5 6 100
3 4 5 6 7
20 5 20 50 0
5 5 10
3 5 -1 5 6
1 2 50 -1 4
10 20 5 6 100
3 4 5 6 7
20 5 20 50 1000
```

Sample Output 2

```
320
-1
-1
-1
124
-1
```