Maximum sum of hour glass

Given a 2D matrix, the task is to find maximum sum of a hour glass.

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An hour glass is made of 7 cells
in following form.
    A B C
      D
    E F G
```

Examples:

```
Input : 1 1 1 0 0
        0 1 0 0 0
        1 1 3 0 0
        0 0 0 2 0
        0 0 0 0 4
Output : 9
Below is the hour glass with
maximum sum:
3 0 0
  2
0 0 4
```

Input:
The first line of input contains an integer T denoting the no of test cases. Then T test cases follow. Each test case contains two space separated integers N and M denoting the size of the matrix. Then in the next line are N*M values of the matrix (m).

Output:
For each test case in a new line print the required output.

Constraints:
1<=T<=100

1<=N,M<=20
1<=m[][]<1000

Example:
Input:
2
1 2
1 2
3 3
1 1 1 1 1 1 1 1 1

Output:
-1
7