

Problem B

Maximum Sum Path

Time limit: 1 second

Memory limit: 2048 megabytes

Problem Description

You have been given a grid with dimensions $n \times m$, where each cell at coordinates (i, j) contains a number $a_{i,j}$, which can be positive, negative, or zero. Your starting point is cell $(1, 1)$, and your goal is to reach cell (n, m) . During your journey, from any cell (i, j) , you have the following options for your next move:

- Move to cell $(i, j + 1)$, earning $a_{i,j+1}$ points.
- Move to cell $(i + 1, j)$, earning $2 \times a_{i+1,j}$ points.
- Move to cell $(i + 1, j + 1)$, earning $4 \times a_{i+1,j+1}$ points.

Your objective is to determine the maximum number of points you can accumulate when you reach cell (n, m) .

Input Format

The first line of the input contains two integers n and m . The i -th of the following n lines contains m integers $a_{i,1}, \dots, a_{i,m}$, where $a_{i,j}$ denotes the number in the cell at coordinates (i, j) .

Output Format

Determine the maximum number of points you can accumulate when you reach cell (n, m) .

Technical Specification

- $1 \leq n, m \leq 200$
- $-10^5 \leq a_{i,j} \leq 10^5$ for $i = 1, 2, \dots, n$ and $j = 1, 2, \dots, m$

Scoring

1. (100 points) No additional constraints.

Sample Input 1

3	4		
3	1	4	1
5	9	2	6
5	3	5	8

Sample Output 1

70

Sample Input 2

```
3 3
-1 -1 -1
-1 -1 -1
-1 -1 -1
```

Sample Output 2

-6

Sample Input 3

```
5 3
-1 2 9
-10 4 -7
3 1 5
-2 0 -6
3 5 2
```

Sample Output 3

30

Sample Input 4

```
1 1
3
```

Sample Output 4

0