

# DMOPC '15 Contest 1 P5 - Lelei and Dragon Scales

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**Time Limit:** 2.0s    **Memory Limit:** 128M

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Lelei is surveying a large field made up of  $W \times H$  cells.

A large battle involving dragons has taken place here, and as such there are scales from dragons strewn all about the field. As dragon scales are extremely valuable and fetch a high price, Lelei would like to collect as many as possible. However, a battlefield is a pretty dangerous place to be, so she can only risk spending enough time on it to pick up the scales in a rectangular subsection of the field with a total area **up to**  $N$ .

Given the distribution of scales on the field and the maximum  $N$  that Lelei has time for, can you help her determine how many scales she'll end up with if she chooses an optimal section of the field?

## Constraints

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### Subtask 1 [10%]

$$1 \leq W, H \leq 20$$

### Subtask 2 [15%]

$$1 \leq W, H \leq 50$$

### Subtask 3 [25%]

$$1 \leq W, H \leq 100$$

### Subtask 4 [50%]

$$1 \leq W, H \leq 250$$

## Input Specification

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The first line of input will contain 3 space-separated integers  $W$ ,  $H$ , and  $N$  ( $N \leq W \times H$ ).  
The next  $H$  lines of input will each contain  $W$  space-separated integers in the range  $[0, 100]$ .

## Output Specification

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A single integer, the maximum number of scales that Lelei can pick up.

## Sample Input 1

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```
5 5 4
0 0 0 0 10
0 5 0 1 2
2 0 3 7 1
8 9 0 1 3
1 5 2 3 7
```

## Sample Output 1

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```
23
```

## Explanation

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Lelei should explore the  $2 \times 2$  bottom-left corner of the field, which would allow her to collect  $8 + 9 + 1 + 5 = 23$  scales.

## Sample Input 2

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```
1 2 1
0
5
```

## Sample Output 2

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```
5
```

## Explanation

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Lelei only has time for 1 cell, so she should choose the one with 5 scales.