Bloomberg CODECON

Memory Limit: 1024 MB
Time Limit: 5 s

Pleasant Walk (200 points)

Introduction

Amy lives in Manhattan, and likes to walk to work. She works at Bloomberg of course. She enjoys looking at the architecture as she walks and she can quantify the enjoyment she derives as she walks down a section of a street. As much as she enjoys walking, she also wants to take a shortest path to get to work. Your task is to figure out the maximum enjoyment she can get from her commute.
Imagine midtown Manhattan as a rectangular grid of city blocks, with side streets going side to side, or East/West, and Avenues going up and down, or South/North. Amy lives **R** blocks to the North (up), and **C** blocks to the West (to the left) of the Bloomberg building. So there are R+1 streets and C+1 Avenues, whose sections are potentially a part of her commute. Each section of a street or Avenue between two adjacent intersections will have an integer assigned to it that signifies the enjoyment of passing down that section. Remember that she's only interested in a shortest commute, so she'll only be moving East or South, never West or North.
You must develop a program to take as input the enjoyment factor for every potential street/avenue and output the maximum enjoyment she can derive from a shortest path to the office.

Input Specifications

The first line will contain two integers, **R** (1 <= R <= 100) and **C** (1 <= C <= 100), signifying the number of rows of city blocks along the vertical and horizontal axes respectively. This means that there are R+1 streets and C+1 avenues surrounding these blocks (RxC blocks).
They will be followed by C integers indicating the enjoyment factor for the C sections of the northernmost street, followed by C+1 integers for the sections of Avenues, left to right between the northernmost street and the one directly below it, and so on, repeated R more times.
For example for the city grid below:

```
+--1--+--2--+
|     |     |
3     4     5
|     |     |
+--6--+--7--+
|     |     |
8     9    10
|     |     |
+--11-+--12-+

your input will be:

2 2
1 2
3 4 5
6 7
8 9 10
11 12
```

Output Specifications

You will output an integer, indicating the maximum enjoyment she can dervice from a commute that is still as short as the shortest commute.

Sample Input/Output

Input

```
2 2
1 2
3 4 5
6 7
8 9 10
11 12
```

Output

```
34
```

Explanation

The most pleasant walk has an enjoyment factor of 34, achieved by walking 2 blocks south, then 2 blocks east.