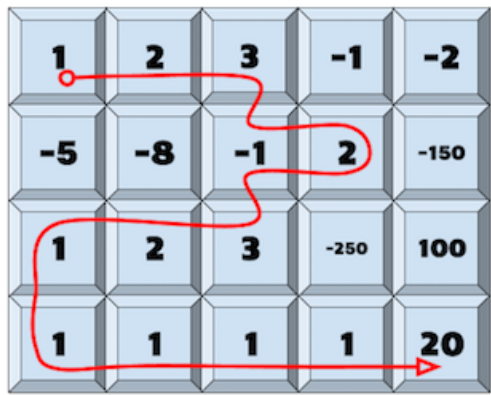


You are playing a matrix-based game with the following setup and rules:

- You are given a matrix  $A$  with  $n$  rows and  $m$  columns. Each cell contains some points. When a player passes a cell their score increases by the number written in that cell and the number in the cell becomes  $0$ . (If the cell number is positive their score increases, otherwise it decreases.)
- The player starts from any cell in the *first* row and can move *left*, *right* or *down*.
- The game is over when the player reaches the *last* row and stops moving.



Print the maximum score that the player can get.

Input Format

The first line contains  $n$  and  $m$ . The next  $n$  lines contain  $m$  numbers each,  $j^{th}$  number in  $i^{th}$  line denotes the number that is written on cell  $A_{i,j}$ .

Constraints

- $1 \leq n \times m \leq 4 \times 10^6$
- $-250 \leq A_{i,j} \leq 250$

Subtasks

- for 20% tests  $1 \leq n, m \leq 40$ .
- for 20% tests  $40 < n, m \leq 500$ .

Output Format

Print the maximum score that the player can get.

Sample Input 0

```
4 5
1 2 3 -1 -2
-5 -8 -1 2 -150
1 2 3 -250 100
1 1 1 1 20
```

```
1 2 3 -250 100
1 1 1 1 20
```

### Sample Output 0

```
37
```

### Explanation 0

Refer the image given in statement, the path followed is **1, 2, 3, -1, 2, -1, 3, 2, 1, 1, 1, 1, 1, 20** summing upto **37**.

Note that, **-1** is traversed **2** times, but the second time it only contributes **0** to the sum.