Problem G
Fence
Time Limit: 1 second

Tony has a rectangular area of land divided into $n \times m$ squares. He wants to divide it into two parts for two companies A and B to rent. Company A agrees to pay a_{ij} golden coins for square (i, j) and company B pays b_{ij} coins.

Tony is required to build a fence to separate lands of two companies. A fence is built along the side two companies have in common. In other word, if a square of company A is next to the square of company B, a fence is built along the common side. The cost of building the fence between 2 squares is $max(p, q)$ golden coins, where p, q are the hardness of each square. Tony has to pay for the cost of building the fence.

Help Tony divide his land into two to maximize his benefit. Benefit equals to the total coins paid by the two company minus the cost of building the fence.

Input

The first line contains two integers n and m ($1 \leq n, m \leq 50$), the size of Tony's land.

The i-th line in the next n lines contains m integers, the j-th integer is a_{ij} ($1 \leq a_{ij} \leq 10^9$), i.e. how much company A pays for square (i, j).

The i-th line in the next n lines contains m integers, the j-th integer is b_{ij} ($1 \leq b_{ij} \leq 10^9$), i.e. how much company B pays for square (i, j).

The i-th line in the next n lines contains m integers, the j-th integer is c_{ij} ($1 \leq c_{ij} \leq 10^9$), i.e. the hardness of building a fence at square (i, j).

Output

Print one integer equals to how much coin Tony benefits.

Sample Input

```
4 4
21 30 25 29
30 40 11 35
32 21 37 13
12 14 31 38
14 48 42 14
17 33 13 14
48 10 22 55
26 11 50 33
3 2 1 7
1 9 8 2
7 1 7 4
8 3 8 9
```

Sample Output

```
474
```

Explanation: