6 Trinket Market

You are managing a tourist trap market with a few different booths. The booths are arranged in an $n \times m$ grid. Each booth sells a souvenir. Souvenirs cost exactly 1 dollar per item at every booth. There will be several customers who walk through this market. Each customer will only visit booths within a sub-rectangle of the market, and each customer has a fixed amount of money to spend.

Also, each booth has a limited inventory of souvenirs, which will not be replenished between customers; the number available differs from booth to booth. Assuming you can control how many souvenirs each booth sells to each customer, what is the most money you can make?

6.1 Input

Each input will consist of a single test case. Note that your program may be run multiple times on different inputs. The first line of input will contain three space-separated integers n, m, and k, where the market has n rows and m columns ($1 \leq n, m \leq 50$), and there will be k ($1 \leq k \leq 10^5$) customers.

Each of the next n lines will have m integers a ($0 \leq a \leq 10^9$). This is a matrix in row major order, indicating the number of souvenirs in the inventory of each booth. *a[r, c]* is the number of souvenirs in the booth in the r^{th} row, c^{th} column. The rows range from 1..n and the columns from 1..m. The top left corner is *a[1, 1]*, and the bottom right corner is *a[n, m]*.

Each of the next k lines will describe a customer, with five integers: t, b ($1 \leq t \leq b \leq n$), l, r ($1 \leq l \leq r \leq m$), and x ($0 \leq x \leq 10^9$). The customer will only shop in the sub-rectangle from *(t, l)* to *(b, r)* inclusive (t=top, b=bottom, l=left, r=right). The customer has exactly x dollars to spend.

6.2 Output

Output a single integer, representing the maximum amount of money to be made by controlling how many items each booth sells to each customer.

6.3 Sample Input/Output

Sample Input 1	**Sample Output 1**
2 3 2 1 2 3 4 5 6 1 2 2 3 20 2 2 1 3 15	20