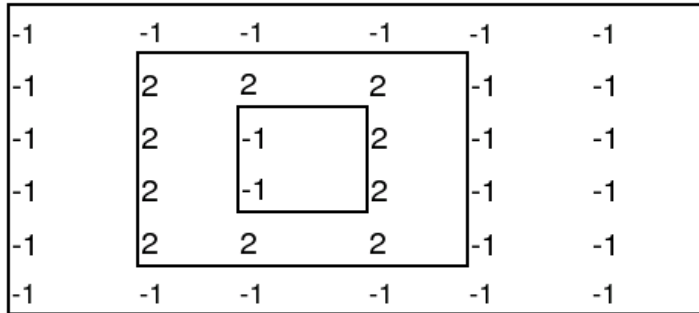


Sultan has a rectangle of R rows and C columns. Each cell of this rectangle contains an integer. Sultan chooses n subrectangles. The i -th subrectangle has R_i rows and C_i columns and it is nested inside $(i - 1)$ -th subrectangle. The first subrectangle is nested inside the initial rectangle. Sultan then multiplies all the integers outside the first subrectangle with M_0 . Then he multiplies all the integers inside i th rectangle but outside $(i + 1)$ -th rectangle with M_i . Then he multiplies all the integers inside n -th subrectangle with M_n . So he get a new rectangle of integers. The sum of all the integers of this new rectangle is S . Help Sultan to choose all this subrectangles in such a way so that S is maximized.



In the above figure, the outer most portion (that is not contained in any of the sub rectangle) is multiplied by M_0 , the portion inside the first rectangle, but outside the second one by M_1 , portion inside 2nd and outside 3rd by M_2 , and so forth. The portion inside the n -th sub rectangle is multiplied by M_n .

Input

First line of the input contains $T(\leq 20)$ the number of test cases. First line of the each test case contains 3 integers R ($1 \leq R \leq 500$), C ($1 \leq C \leq 500$) and n ($1 \leq n \leq 5$). Second line contains n integers R_1, R_2, \dots, R_n ($R > R_1 > R_2 > \dots > R_n$). Third line contains n integers C_1, C_2, \dots, C_n ($C > C_1 > C_2 > \dots > C_n$). The values R_i, C_i describes the dimensions of the i -th sub rectangle. Fourth line contains $n + 1$ integers M_0, M_1, \dots, M_n ($-10 \leq M_i \leq 10$), the values of each multiplier. Lines 5 to line $4 + R$ each contain C integers. The j -th integer in the $(i + 4)$ -th line is the number in the i -th row and j -th column of the initial rectangle. All the integers in the initial rectangle is between -100 to +100 inclusive.

Output

For each test case output contains one integer denoting the maximum value of S .

Sample Input

```

1
6 6 2
4 2
3 1
0 1 -1
-1 -1 -1 -1 -1 -1
-1 2 2 2 -1 -1
-1 2 -1 2 -1 -1
-1 2 -1 2 -1 -1
-1 2 2 2 -1 -1
-1 -1 -1 -1 -1 -1

```

Sample Output

22