Problem M. Memento Mori

Input file:	*standard input*
Output file:	*standard output*
Time limit:	3 seconds
Memory limit:	64 mebibytes

Professor Zhang has an $n \times m$ matrix consisting of all zeroes. Professor Zhang changes k elements of the matrix into 1s.

Given a permutation p of $\{1, 2, 3, 4\}$, Professor Zhang wants to find the number of such submatrices that:

- The number of 1s in the submatrix is exactly 4.
- Let the positions of the 1s in the submatrix be (r_1, c_1), (r_2, c_2), (r_3, c_3), and (r_4, c_4). Then $r_1 < r_2 < r_3 < r_4$ and $(p_i - p_j) \cdot (c_i - c_j) > 0$ for all $1 \le i < j \le 4$.
- no other submatrices inside the chosen submatrix meet the above two requirements.

Input

There are multiple test cases. The first line of input contains an integer T indicating the number of test cases. For each test case:

The first line contains three integers n, m and k ($1 \le n, m, k \le 2000$): the size of the matrix and the number of 1s. The second line contains four integers p_1, p_2, p_3, p_4 denoting the permutation of $\{1, 2, 3, 4\}$.

Each of the next k lines contains two integers r_i and c_i ($1 \le r_i \le n$, $1 \le c_i \le m$): the position of the i-th 1. No two 1s will be in the same position.

There are at most 250 test cases, and the total size of the input is at most 250 kibibytes.

Output

For each test case, output a single integer: the number of submatrices which meet all the requirements.

Example

standard input	standard output
1 5 5 4 1 2 3 4 1 1 2 2 3 3 4 4	1