Cutting Chocolate

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1.5 seconds
Memory limit:	1024 megabytes

Little L has a piece of chocolate of size $L \times W \times H$. Inside the chocolate, there are n almonds, with the i-th almond located at the center of the unit cube $[x_i - 1, x_i] \times [y_i - 1, y_i] \times [z_i - 1, z_i]$. No two almonds occupy the same position.

Now, Little L wants to cut this piece of chocolate into several smaller pieces. Specifically, he wants to make p, q, r cuts along the three dimensions, respectively. Each cut must be made along integer coordinates, no two cuts can be made at the same coordinate in the same dimension, and cuts cannot be made at the edges of the chocolate (i.e., at coordinates 0 or L, W, H).

Formally, a cut in the x direction at coordinate k ($0 < k < L$) means cutting the chocolate along the plane $x = k$. The same applies for the y and z directions.

Additionally, for the $(p+1)(q+1)(r+1)$ pieces of chocolate after the cuts, Little L hopes that each piece contains the same number of almonds. Little L wants to know how many essentially different cutting methods satisfy this condition. Two cutting methods are considered different if there exists a position in one dimension such that the first method cuts at this position while the second does not. Output the result modulo $10^9 + 7$.

Input

The first line of each test case contains three integers L, W, H ($1 \le L, W, H \le 10^9$), representing the size of the chocolate.

The second line contains three integers p, q, r ($0 \le p, q, r \le 10^6$), representing the number of cuts in the x, y, and z directions, respectively.

The third line contains an integer n ($1 \le n \le 10^6$), representing the number of almonds.

The following n lines each contain three integers x_i, y_i, z_i ($1 \le x_i \le L, 1 \le y_i \le W, 1 \le z_i \le H$), representing the position of an almond. It is guaranteed that all triples (x_i, y_i, z_i) are distinct.

Output

A single line containing an integer that represents the result modulo $10^9 + 7$.

Examples

standard input	standard output
4 4 1 1 1 0 4 1 2 1 2 4 1 3 1 1 4 3 1	1
3 3 3 1 1 1 3 1 1 1 2 2 2 3 3 3	0
9 9 9 1 1 1 8 1 1 2 2 2 8 1 9 1 2 8 9 8 2 1 9 2 9 9 8 1 8 9 7	180