Problem A

Attacker

Input: Standard Input
Output: Standard Output

There are k attackers in an n * m chessboard.

The i-th attacker is located in (X_i, Y_i), with a attacking range of R_i.

A square (X, Y) is attacked by the i-th attacker if and only if $|X - X_i| + |Y - Y_i| <= R_i$.

Count the number of squares on the chessboard attacked by at least one attacker.

Input

There are several input cases. The first line contains three integers n, m, k ($1 \le n,m \le 100000000$, $1 \le k \le 20000$). In the following k lines, each line contains three integers X_i, Y_i, R_i ($1 \le X_i \le n$, $1 \le Y_i \le m$, $1 \le R_i \le 1000000$), the position and attack range of each attacker.

The last case is followed by a single zero, which should not be processed.

Output

For each case, print the case number and the answer.

Sample Input	Sample Output
4 4 3 1 1 1 3 1 1 3 3 1 1 10 1 1 1 1 0	Case 1: 10 Case 2: 2

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