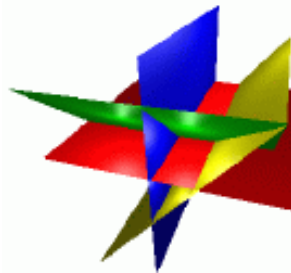


Consider the following constraint satisfaction problem. You are given n variables x_1, x_2, \dots, x_n and a set of m two-variable linear constraints. Each constraint takes the form $ax_i + bx_j = c$ where a , b , and c are integer constants. Each variable is allowed to take an integer value between 1 and k for some specified constant k .

Your goal is to determine if it is possible to assign an integer value in the valid range to each variable such that all constraints are satisfied.



Input

The number of test cases is given in the first line of the input. Each test case begins with a line containing integers n , m , and k where $1 \leq n \leq 1000$ is the number of variables, $0 \leq m \leq 10,000$ is the number of constraints and $1 \leq k \leq 100$ is the largest value allowed for the variable assignments. The following m lines each contain 5 integers a , i , b , j , and c where $1 \leq i, j \leq n$ and $0 \leq |a|, |b|, |c| \leq 10,000,000$.

Output

For each test case, output one line containing 'yes' if all constraints are satisfiable and 'no' otherwise.

Sample Input

```
2
2 1 10
3 1 6 2 5
2 1 10
3 1 6 2 9
```

Sample Output

```
no
yes
```