Crooked Cycles

Input file:	`standard input`
Output file:	`standard output`
Time limit:	3 seconds
Memory limit:	1024 megabytes

Mr. Nežmah has a peculiar taste in triples. He likes m unordered triples of pairwise distinct numbers (a_i, b_i, c_i).

A *cycle* of length k is a sequence of (not necessarily distinct) numbers $v_1, \ldots, v_k$ where every three consecutive numbers form a triple Nežmah likes, as well as (v_{k-1}, v_k, v_1) and (v_k, v_1, v_2).

A cycle is *crooked* if its length is **not** divisible by 3. Check whether there exists a crooked cycle.

Input

The first line contains a single integer t ($1 \le t \le 2 \cdot 10^4$), the number of test cases.

The first line of each test case contains a single integer m ($1 \le m \le 2 \cdot 10^5$).

The following m lines contain integers a_i, b_i, and c_i ($1 \le a_i, b_i, c_i \le 2 \cdot 10^5$). The numbers a_i, b_i, and c_i are pairwise distinct for each i, and all unordered triples are distinct.

It is guaranteed that the sum of m over all test cases does not exceed $2 \cdot 10^5$.

Output

For each test case, output `yes` if there exists a crooked cycle; otherwise, output `no`.

Example

standard input	standard output
3 4 1 2 3 2 3 4 3 4 1 4 1 2 8 3 2 5 6 3 7 7 3 2 1 5 6 5 2 6 7 4 6 3 2 6 3 2 1 7 7 4 6 2 3 7 7 2 4 5 4 6 3 6 7 5 3 6 1 4 6	yes yes no

Note

In the second test case (2 3 5 2 6 3 2 7 3 6) forms a crooked cycle (although there are smaller ones as well).