# Wormholes - POJ 3259

**https://vjudge.net/problem/POJ-3259**

While exploring his many farms, Farmer John has discovered a number of amazing wormholes. A wormhole is very peculiar because it is a one-way path that delivers you to its destination at a time that is BEFORE you entered the wormhole! Each of FJ's farms comprises $N$ ($1 \le N \le 500$) fields conveniently numbered 1..$N$, $M$ ($1 \le M \le 2500$) paths, and $W$ ($1 \le W \le 200$) wormholes.

As FJ is an avid time-traveling fan, he wants to do the following: start at some field, travel through some paths and wormholes, and return to the starting field a time before his initial departure. Perhaps he will be able to meet himself :) .

To help FJ find out whether this is possible or not, he will supply you with complete maps to $F$ ($1 \le F \le 5$) of his farms. No paths will take longer than 10,000 seconds to travel and no wormhole can bring FJ back in time by more than 10,000 seconds.

## Input

Line 1: A single integer, $F$. $F$ farm descriptions follow.
Line 1 of each farm: Three space-separated integers respectively: $N$, $M$, and $W$
Lines 2..$M$+1 of each farm: Three space-separated numbers ($S$, $E$, $T$) that describe, respectively: a bidirectional path between $S$and $E$ that requires $T$ seconds to traverse. Two fields might be connected by more than one path.
Lines $M$+2..$M$+$W$+1 of each farm: Three space-separated numbers ($S$, $E$, $T$) that describe, respectively: A one way path from $S$ to $E$that also moves the traveler back $T$ seconds.

## Output

Lines 1..$F$: For each farm, output "YES" if FJ can achieve his goal, otherwise output "NO" (do not include the quotes).

## Sample Input

```
2
3 3 1
1 2 2
1 3 4
2 3 1
3 1 3
3 2 1
1 2 3
2 3 4
3 1 8
```

## Sample Output

```
NO
YES
```

## Hint

For farm 1, FJ cannot travel back in time.
For farm 2, FJ could travel back in time by the cycle 1->2->3->1, arriving back at his starting location 1 second before he leaves. He could start from anywhere on the cycle to accomplish this.