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| **Wormholes**   |  |  |  | | --- | --- | --- | | **Time Limit:** 2000MS |  | **Memory Limit:** 65536K | |  |  |  |   **Description**  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 ≤ *N* ≤ 500) fields conveniently numbered 1..*N*, *M* (1 ≤ *M* ≤ 2500) paths, and *W* (1 ≤ *W* ≤ 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 ≤ *F* ≤ 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.  **Source**  [USACO 2006 December Gold](http://poj.org/searchproblem?field=source&key=USACO+2006+December+Gold) |