Online

Section A1

Time: 40 Minutes

Alice is playing a simple game named Graphgame, where in a graph there are vertices and connecting the nodes are directed edges with a reward weight. Alice is to start from a specific vertex and reach a specific destination vertex, where the game ends. It is ensured that every other vertex has a single directed edge of weight 3 to the destination vertex, and there are no edges coming out of the destination vertex. Before reaching the destination vertex, Alice can travel from one vertex to another (if there is an edge between them) and by travelling she will gain reward points equal to the weight of the connecting edge. Alice wants to collect as much reward points as possible.

However, Alice actually doesn't care about reaching the final destination, she only wants to know if she can gain an *infinity* amount of reward points (or at least, any amount of reward point she wishes). **This is only possible if she can reach a cycle of *positive weight* from her starting vertex**. Help Alice find out if she can gain infinity reward points.

By the way, Alice loves the Floyd-Warshall algorithm, so she suggests you to solve the problem using this algorithm.

Input / Output

The first line of input consists of 2 integers N and M, the no. of input vertices and edges respectively. *None of these N vertices is the destination vertex* (as Alice actually doesn't care about reaching the destination!).

The next M lines contain 3 integers u, v and w indicating there is an edge from vertex u to v of reward weight w in the graph. After these M lines each line will contain an integer S, the starting vertex of Alice. The program terminates when -1 is given as input (i.e., S).

For each S, you are to output if Alice can reach a cycle of positive weight from S.

Sample Input	Sample Output
11 11	4 : yes
2 1 7	7 : no
1 4 3	10 : yes
4 3 4	8 : no
3 2 2	
11 10 2	
10 6 4	
6 5 -15	
5 4 2	
6 7 3	
8 7 -1	
7 9 2	
4	

7 10 8 -1	