homework10.1 Edges in MST

Description

Consider a connected weighted undirected graph G without any loops and multiple edges.

Your task is to determine the situation for each edge of the given graph: whether it is included in at least one MST, or not included in any MST.

Input Format

The first line contains two integers n and m ($1 \le n \le m+1$, $2 \le m \le 10^5$) — the number of vertices and the number of edges.

Then follow m lines, each of them contains three integers — the description of the graph's edge as " $a_i b_i w_i$" ($1 \le a_i, b_i \le n$) ($a_i \ne b_i$) ($1 \le w_i \le 5 * 10^4$), where a_i and b_i are the indices of vertices connected by the i-th edge and w_i is the edge's weight.

It is guaranteed that the graph is connected and doesn't contain loops nor multiple edges.

Output Format

Print m lines — the answers for all edges.

If the i-th edge is included in at least one MST, print "at least one", otherwise, print "none".

Print the answers for the edges in the order in which the edges are specified in the input.

Sample Input	Sample Output
4 5 1 2 101 1 3 100 2 3 2 2 4 2 3 4 1	none at least one at least one at least one at least one

Hint

kruskal's algorithm