Weight restrictions

The country of Byteland has N cities (numbered from 1 to N) and M two-way roads
(numbered from 1 to M) connecting between cities. The i-th road connects city a_i to
city b_i. Initially, this road is assigned a value c_i, says the road weight restriction, which
allows any vehicle with weight less than or equal to c_i to go through. There is no more
than one road connecting the same pair of cities, and there is no road that connect a
city to itself.

The country has started a mega construction project to upgrade the network. During
these time, the weight restriction of some roads may be changed to lower or higher.
These changes may make confusion for the citizens because they need to know: "How
many cities I can reach from city u with my vehicle of weight w".

Input
  - The first line contains T (1 <= T <= 6) - the subtask's kind of this test.
  - The next line contains N - the number of cities and M - the number of roads. (1
    <= 50,000 <= N, 0 <= 100,000 <= M)
  - The i-th line of the next M lines describes the i-th road with 3 numbers ai bi ci (1
    <= ai, bi <= N, ai != bi, 0 <= ci <= 1,000,000,000).
  - The next line contains Q - the number of queries, following by Q lines (1 <= Q <=
    100,000). Each of them consists of 3 integers in either format:
      o 1 x w: set the new weight restriction of the x-th road to w. (1 <= x <= M, 0
        <= w <= 1,000,000,000)
      o 2 u w: count the number of reachable cities from u with the weight of w (1
        <= u <= N, 0 <= w <= 10^9). City v is considered reachable from city u
        with weight w if there exists a path from u to v such that any road weight
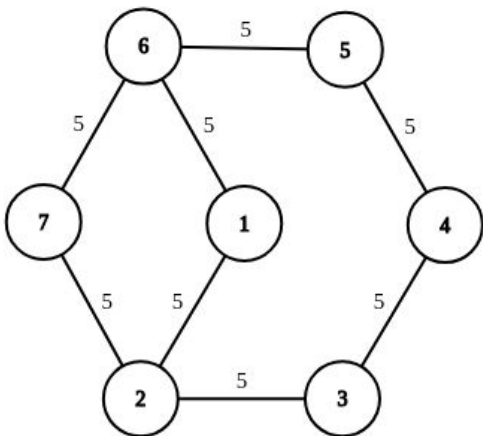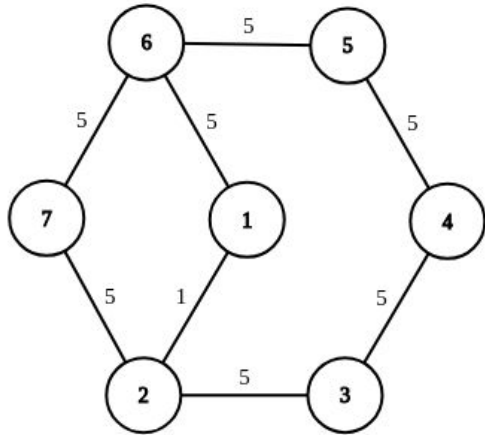   restriction in this path greater than or equal to w.

Output
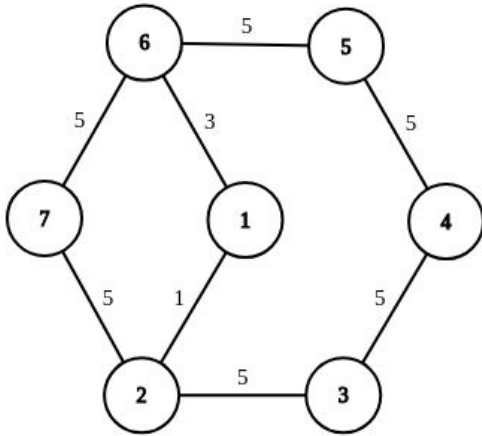For each of the type-2 queries, print the answer in a line.

Sample

Input	Output
1 7 8 1 2 5	1 7 7

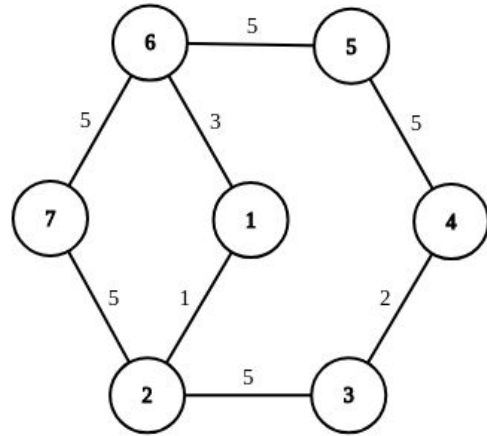|	
1 6 5 2 3 5 2 7 5 3 4 5 4 5 5 5 6 5 6 7 5 12 2 1 6 1 1 1 2 1 2 1 2 3 2 2 2 1 5 2 1 3 0 2 2 4 2 4 2 1 8 0 2 1 1 2 1 3	5 7 7 4

Explanation

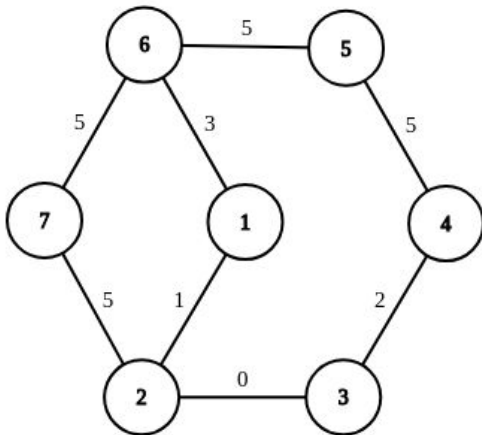| Initial	Change weight restriction of edge 1 (1, 2) to 1

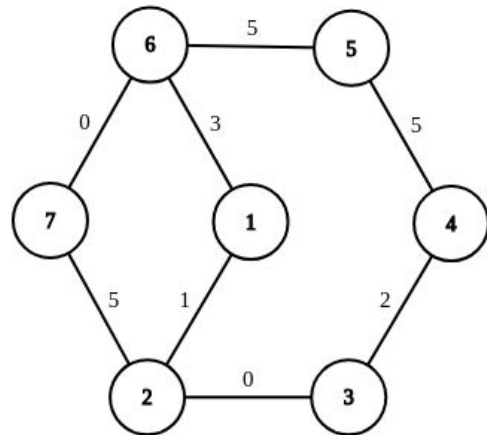## Change weight restriction of edge 2 (1 6) to 3

Change weight restriction of edge 5 (3, 4) to 2

Change weight restriction of edge 3 (2 3) to 0

Change weight restriction of edge 8 (6 7) to 0

Constraint

Subtask	Pts	N	M	Q	Extra constraints
1	5	[1, 100]	[1,1000]	[1,10000]	
2	16	[1, 50000]	[1, 50000]	[1, 100000]	The graph forms a line M=N-1 Ai=i Bi=i+1
3	25	[1, 32767]	[1, 32768]	[1, 100000]	The graph is in the shape of a **full** binary tree. N=2^k-1 M=N-1 Ai=i+1 Bi=(i+1) div 2
4	14	[1, 50000]	[1, 100000]	[1, 100000]	All queries are type-2 (there is no change in weight restriction)
5	13	[1, 20000]	[1, 20000]	[1, 100000]	The graph forms a valid tree M=N-1
6	27	[1, 50000]	[1, 100000]	[1, 100000]	No extra constraints