

제 7 회
대학생
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경시대회

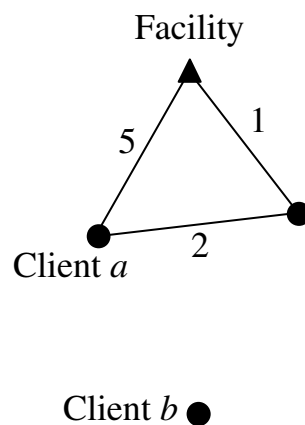


문제 F

Servicing Clients

One facility and several clients are located in some vertices of a weighted graph $G = (V, E)$. Each client j has some nonnegative demand d_j and a nonnegative priority value p_j that indicates the importance of that client. The *servicing cost* of a client j is $c_j \cdot d_j$, where c_j is the shortest distance of j from the facility vertex in graph G to a client j . For example, in the figure below, the servicing cost of the client a is $3 \cdot d_a$, where d_a is the demand of the client a . The servicing cost of the client b in the figure is infinite because there is no path from the client b to the facility in the given graph.

You have to write a program that selects a subset of the client set such that total servicing cost of all the clients in this subset is bounded by a nonnegative budget B and the total priority value of all clients in this subset is maximized.



입력

Your program is to read from standard input. The input consists of T ($1 \leq T \leq 20$) test cases. The value of T is given in the first line of the input. Each test case starts with a positive integer N ($1 \leq N \leq 100$) indicating the number of vertices in the graph. You can assume that the vertices are numbered from 0 to $N - 1$ and vertex 0 contains the facility. The next line contains an integer M ($0 \leq M \leq 100$) indicating the number of clients. Next M lines contain the description of each client. Each line contains three integers – vertex index, demand and priority value of the client. Each integer has ranges of $[0, 100]$. After the description of M clients, the next line contains an integer B ($0 \leq B \leq 100$) indicating the total budget. The next line contains an integer L ($0 \leq L \leq 100$) indicating the number of edges. Next L lines describe the edges. Each line contains three integers – first two integers indicate

the two vertices incident to the edge and the third integer indicates its cost. Again each integer is within the range of [0,100].



Your program is to write to standard output. Print exactly one line for each test case with the total priority value of the clients selected for the service.

Sample Input

Output for the Sample Input

2	7
4	10
4	
1 5 7	
2 35 20	
3 12 32	
3 10 2	
30	
5	
0 1 5	
0 2 4	
1 3 13	
2 3 4	
1 2 2	
6	
6	
1 3 4	
1 2 4	
3 4 5	
3 2 1	
4 6 3	
5 1 2	
20	
8	
0 1 3	
1 2 5	
2 3 3	
3 4 5	
4 5 10	
0 5 4	
0 3 4	
2 5 6	