Problem H. Accel World

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	256 mebibytes

Chiaki was trapped in a strange place which can be regarded as a connected undirected graph with n vertices (numbered from 1 to n) and m weighted edges (numbered from 1 to m). In the beginning, Chiaki is at vertex 1 with speed v equal to 1 unit per second, and she would like to go to vertex n.

There are some special vertices in the graph, called *acceleration vertices*. Once Chiaki reaches an acceleration vertex, her speed will be doubled: from v to $2v$. The same acceleration vertex can be used multiple times to achieve multiple acceleration, but it only works under the following limitation: the last acceleration vertex Chiaki visited should not be equal to the current acceleration vertex Chiaki reached.

For example, suppose vertices 2 and 3 are acceleration vertices, while 1, 4, and 5 are not. If Chiaki chooses the path $1 \to 2 \to 3 \to 2 \to 5$, Chiaki would be accelerated three times (8 unit per second in the end). But if the path is $1 \to 2 \to 4 \to 2 \to 4 \to 2 \to 5$, Chiaki would only get one acceleration.

Chiaki would like to know the minimum time needed to reach the vertex n. Among all possible ways to do it in minimum time, she would also like to find a way which gives her the maximum number of accelerations.

Input

There are multiple test cases. The first line of the input contains an integer T, indicating the number of test cases. For each test case:

The first line contains three integers, n, m, and k ($2 \le n \le 100$, $1 \le m \le 8000$, $0 \le k \le n$): the number of vertices, the number of edges and the number of acceleration vertices.

Each of the following m lines contains three integers, u_i, v_i, and w_i ($1 \le u_i, v_i \le n$, $1 \le w_i \le 1000$) denoting an edge with length w_i units connecting vertices u_i and v_i.

The next line contains k integers $p_1, p_2, \ldots, p_k$ ($1 \le p_i \le n$) denoting the indices of acceleration vertices. It is guaranteed that all these indices are distinct.

It is guaranteed that the sum of n over all test cases will not exceed 1000, and the sum of m over all test cases will not exceed 80 000.

Output

For each test case, output two numbers on a single line: a real number t denoting the minimum time to reach the vertex n, and an integer s denoting the maximum number of accelerations Chiaki can achieve among all optimal solutions.

Your answer for t will be considered correct if the absolute or relative error of your answer is less than 10^{-6}. And by the way, if s is greater than 32 767, output "`Burst!`" (without the quotes) instead.

Example

standard input	standard output
3 2 1 2 1 2 1 1 2 5 4 2 1 2 1 2 3 1 3 4 1 4 5 1 2 3 6 7 2 1 2 2 2 4 2 4 6 2 1 3 2 3 4 2 4 5 4 5 6 4 3 4	0.5000000000 2 2.0000000000 Burst! 3.5000000000 2