Problem C. Control point

Input file:	`stdin`
Output file:	`stdout`
Time limit:	2 seconds
Memory limit:	512 megabytes

bobo has a tree with n vertices. There are m vertices on the tree that bobo thinks very special.

bobo would like to choose a (maybe empty) subset of vertices as control points, so that every special vertex can reach an control points via no more than r edges.

Find out the number of such subsets, modulo $(10^9 + 7)$.

Input

The first line contains 3 integers n, m, r ($1 \le n \le 2000, 0 \le m \le n, 0 \le r < n$).

Vertices are numbered by $1, 2, \ldots, n$ for convenience.

The second line contains m distinct integers $v_1, v_2, \ldots, v_m$ which denotes the special vertices ($1 \le v_i \le n$).

Each of the following $(n-1)$ lines contains 2 integers a_i, b_i which denotes an edge between vertices a_i and b_i ($1 \le a_i, b_i \le n$).

Output

A single integer denotes the number of subsets.

Sample input and output

stdin	stdout
3 1 1 1 1 2 2 3	6
4 1 2 1 1 2 2 3 2 4	15