# Problem F. Counting Orders

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

You are given a rooted tree on $n$ vertices numbered from 1 to $n$. The root of the tree is vertex 1, and for each vertex $i$ ($i \geq 2$), its parent is vertex $p_i$.

Consider a permutation $q_i$ ($1 \leq i \leq n$). We will call this permutation *proper* if, for any vertex $v$, all its descendants are located to the right of the position of $v$ in permutation $q$.

You are asked to find the number of proper permutations $q_i$ such that $q_k = v$, taken modulo $10^9 + 7$.

## Input

The first line of the input contains a single integer $n$ ($1 \leq n \leq 5000$), the number of vertices in the tree.

The second line contains $n - 1$ integers $p_2, p_3, \ldots, p_n$ ($1 \leq p_i < i$), the parents of all vertices in the tree except the root. In particular, when $n = 1$, the second line is present but empty.

The last line contains two integers $v$ and $k$ ($1 \leq v, k \leq n$).

## Output

Output one integer: the remainder of the number of proper permutations $q_i$ with $q_k = v$ modulo $10^9 + 7$.

## Example

| standard input | standard output |
|---|---|
| 6<br>1 1 1 2 3<br>2 3 | 9 |

## Note

The valid proper permutations for the sample case are:

132456, 132465, 132546, 132564, 132645, 132654, 142356, 142365, 142536.