Problem H: Video Game Story

Filename: `story`
Time limit: `10 seconds`

Webros has finished what is now one of her favorite video games. What she notices about this particular video game is that there are several ways to finish the game and arrive at the ending of the game.

This game consists of n events indexed 1 through n, and event indexed i ($1 \le i < n$) is followed by event e_i. Each event can only occur after all prior events leading up to it have already occurred.

Problem

Now Webros wonders how many unique ways (a way, in this context, is an ordering of the completion of the levels) she can play the game. Two ways are considered different if there are two events *a* and *b* where *a* occurs before *b* in one way, but *b* occurs before *a* in the other way.

Input

The first line of input will consist of a single positive integer, c, representing the number of input cases to process. The first line of each input case contains a single positive integer, n, representing the number of events for the input case. The second line contains n - 1 space separated positive integers. The i^{th} integer on this line, e_i, denotes that event i must occur some time prior to event e_i. The last event is guaranteed to require all of the first n - 1 events, directly or indirectly, and it's guaranteed that there exists at least one way to arrive at event n, satisfying all of the constraints.

Output

For each input case, on a line by itself, output the ***remainder*** of the number of ways in which Webros can play the game when divided by 10^9+7.

Input Bounds and Corresponding Credit

30 Points	70 Points
• $0 < c \le 10$ • $1 < n \le 10$ • $1 \le e_i \le n$	• $0 < c \le 30$ • $1 < n \le 5000$ • $1 \le e_i \le n$

Samples

Input	Output
3 4 2 3 4 5 2 5 4 5 7 2 4 4 7 7 5	1 6 45