

Problem H. Compressed Spanning Subtrees

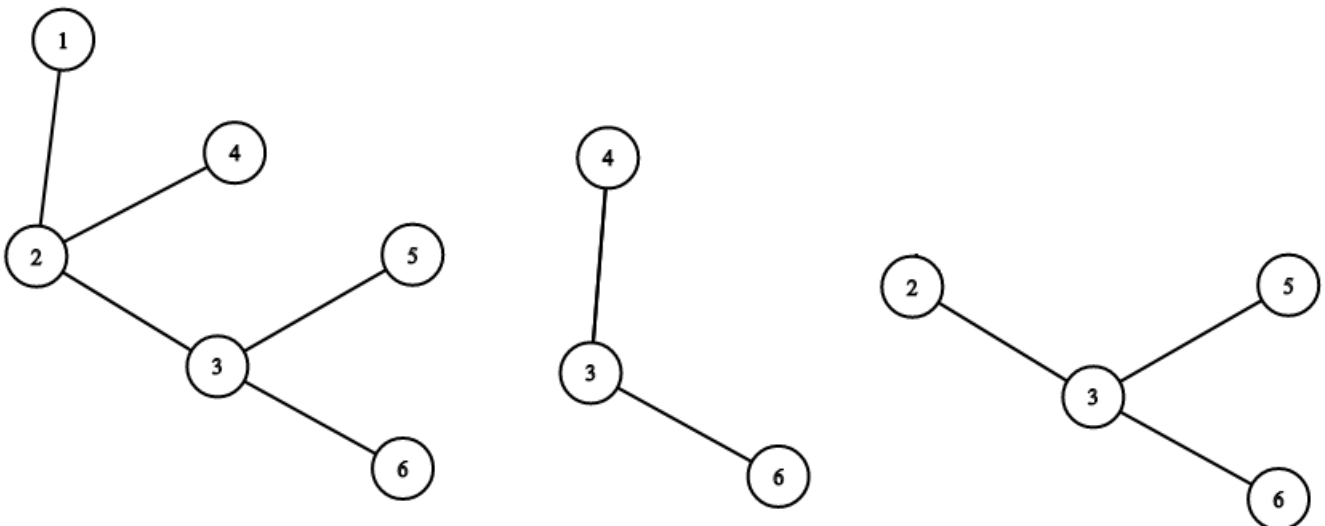
Input file: *standard input*
Output file: *standard output*
Time limit: 2 seconds
Memory limit: 256 mebibytes

This is an interactive problem. Make sure that your output does not get buffered after each query. Use, for instance, `fflush(stdout)` in C++, `System.out.flush()` in Java, or `sys.stdout.flush()` in Python.

For a tree T consisting of n vertices numbered from 1 to n , the *compressed spanning subtree* $S(X)$ of a set X of *spanned* vertices (vertices that are not in X are called *not spanned*) can be defined by the following algorithm:

1. Assign $S(X) \leftarrow T$;
2. If there is any *not spanned* vertex that has exactly one edge incident to it, remove it along with the edge;
3. Repeat step 2 while its condition stays true;
4. If there is any *not spanned* vertex that has exactly two edges incident to it, remove it along with the edges and add a new edge connecting the two remaining endpoints of the removed edges;
5. Repeat step 4 while its condition stays true.

Formally, $S(X)$ is the smallest subgraph of T containing all vertices in X and then having all other vertices of degree two or less smoothed out.



The tree from test 1, and its compressed spanning subtrees for $X = \{3, 4, 6\}$ and for $X = \{2, 5, 6\}$.

You are not given the tree T . Instead, your task is to find it. You can ask questions of the following form: “How many vertices does the compressed spanning subtree of X contain?”. And since otherwise finding the tree by asking such questions would be impossible, there are no vertices incident to exactly two edges in T .

Interaction Protocol

The first line of input contains a single integer n ($2 \leq n \leq 100$).

Your program can ask a question by printing a line in the format “? k x_1 x_2 ... x_k ” where integer k ($1 \leq k \leq n$) equals to the number of vertices in X and distinct integers x_i ($1 \leq x_i \leq n$) represent these vertices in any order. You can ask no more than 2550 questions.

The answer for such question is an integer given on a separate line: the number of vertices in the compressed spanning subtree in question.

After asking sufficient questions, your program must give the answer by printing a line in the format “! p_2 p_3 ... p_n ”. Here, considering T as a rooted tree with root at vertex 1, p_i must be the parent vertex of vertex i . After giving the answer, the program must immediately terminate gracefully.

Example

standard input	standard output
6	
3	? 3 4 3 6
4	? 4 1 2 3 6
4	? 3 2 5 6
	! 1 2 2 3 3