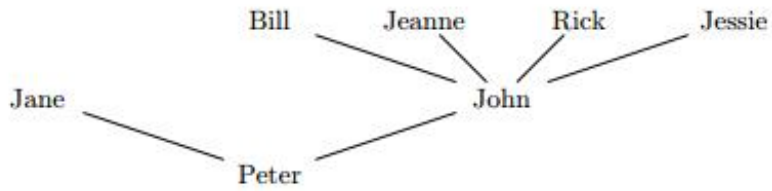
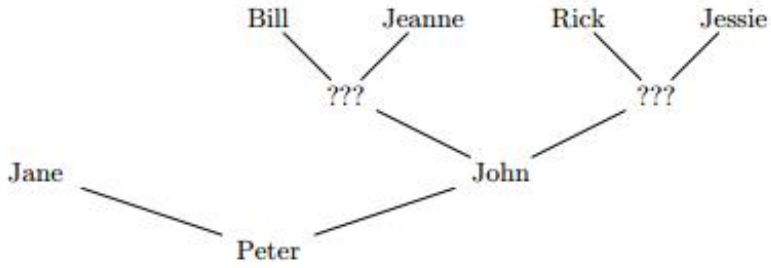
GENEALOGY

Alien Peter wants to trace his family pedigrees. Working hard for several weeks, he has created a beta- version of his family tree. Unfortunately, some of his ancestors have too much parents in this tree (aliens have *d* parents). So Peter thinks that some of parent-child relations actually are ancestor-descendant relations. Now Peter wants to know, what minimal number of ancestors need to be added to the tree to make it look well-formed (family tree looks well-formed if each alien has no more than *d* parents, each alien must appear at the tree only once).

For example, if $d = 2$, and beta-version of the family tree looks like this:



then Peter should add at least two ancestors to make it look well-formed:



Input

Let Peter's ancestors, appeared in the beta-version of his family tree, have identifiers from 1 to *n* (let Peter's identifier be 0).

The first line of input file contains numbers *n* and *d* ($2 \le n \le 100\ 000$, $2 \le d \le n$). The following line contains *n* numbers, the *i*-th number is an identifier of the child of the *i*-th alien.

Output

Write the minimal number of Peter's ancestors, that should be added to this tree to make it look well- formed.

Examples

№	stdin	stdout
1	6 2 5 5 0 5 0 5	2