G. Suffix Subgroup

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

You are given a group of n strings: $s_1, s_2, ..., s_n$.

You should find a subgroup $s_{i_1}, s_{i_2}, ..., s_{i_k}$ $(1 \le i_1 < i_2 < ... < i_k \le n)$ of the group. The following two conditions must hold:

- there exists a string t such, that each string from found subgroup is its suffix;
- the number of strings in the found subgroup is as large as possible.

Your task is to print the number of strings in the found subgroup.

Input

The first line contains an integer n $(1 \le n \le 10^5)$ — the number of strings in the group. Each of the next n lines contains a string. The i-th line contains non-empty string s_i.

Each string consists only from lowercase Latin letters. The sum of all strings s_i doesn't exceed 10^5.

Output

Output a single integer — the number of strings in the found subgroup.

Examples

input
6 bb bb b aaa aa z
output
3

Note

Look at the test sample. The required subgroup is s_1, s_2, s_3.