

3451 Longest Common Substring

Given N strings, you are to calculate the length of their longest common substring.

Input

There are multiple test cases. The first line of each test case contains an integer N ($1 \leq N \leq 30$) indicating the number of strings in this test case. Then, N strings will be given in the next N lines. A string may consist of alphabetic letters and digits only. It is guaranteed that the total length of all strings in each test case is not longer than 100000.

Output

For each test case, output the length of the longest common substring in a single line.

Sample Input

```
3
windows
dog
commandos
```

Sample Output

```
2
```