ECOO '16 R3 P3 - CamelCase

Time limit: 2.5s (Python: 7.0s) **Memory limit:** 64M (Python: 128M)

Many programmers use `CamelCase` when naming variables, functions, classes and other entities. In CamelCase, when a name consists of multiple words concatenated together, such as `myawesomevariablename`, the first letter of every distinct word is capitalized. Sometimes there is more than one way to turn a string of letters into CamelCase.

	Lower	Upper
`CamelCase`	`myAwesomeVariableName`	`MyAwesomeVariableName`

In Lower CamelCase the first word is the only word not capitalized, whereas in Upper CamelCase all of the words are capitalized.

The input will contain a dictionary, followed by 10 test cases.

The dictionary starts with an integer N where $(1 \leq N \leq 2 \times 10^5)$ followed by N lines, each containing a word. A word consists of a string of lowercase English letters and the apostrophe character `'` (ASCII 39).

Each of the 10 lines following the dictionary will contain a single test case. Each test case consists of a string of lowercase English letters of length 2000 or less, created by concatenating words from the dictionary.

Your program should output 10 integers (one per line), representing the minimum number of capitalizations required to convert each test word to Lower `CamelCase`, so that it can be read as a string of legal words from the dictionary.

Note that the sample input below contains only 4 test cases, but the real data files will contain 10.

Sample Input

```
26
aid
all
app
apple
brown
come
country
crab
crabapple
dogs
for
fox
good
is
jumps
lazy
men
now
of
orchard
over
quick
the
their
time
to
apple
appleorchard
crabapple
thequickbrownfoxjumpsoverthelazydogs
```

Sample Output

```
0
1
0
8
```