

## 5103 Computer Virus on Planet Pandora

Aliens on planet Pandora also write computer programs like us. Their programs only consist of capital letters ('A' to 'Z') which they learned from the Earth. On planet Pandora, hackers make computer virus, so they also have anti-virus software. Of course they learned virus scanning algorithm from the Earth. Every virus has a pattern string which consists of only capital letters. If a virus's pattern string is a substring of a program, or the pattern string is a substring of the reverse of that program, they can say the program is infected by that virus. Give you a program and a list of virus pattern strings, please write a program to figure out how many viruses the program is infected by.

### Input

There are multiple test cases. The first line in the input is an integer  $T$  ( $T \leq 10$ ) indicating the number of test cases.

For each test case:

The first line is a integer  $n$  ( $0 < n \leq 250$ ) indicating the number of virus pattern strings.

Then  $n$  lines follows, each represents a virus pattern string. Every pattern string stands for a virus. It's guaranteed that those  $n$  pattern strings are all different so there are  $n$  different viruses. The length of pattern string is no more than 1,000 and a pattern string at least consists of one letter.

The last line of a test case is the program. The program may be described in a compressed format. A compressed program consists of capital letters and "compressors". A "compressor" is in the following format:

$[qx]$

$q$  is a number ( $0 < q \leq 5,000,000$ ) and  $x$  is a capital letter. It means  $q$  consecutive letter  $x$ 's in the original uncompressed program. For example,  $[6K]$  means 'KKKKKK' in the original program. So, if a compressed program is like:

AB[2D]E[7K]G

it actually is ABDDEKKKKKKKG after decompressed to original format.

The length of the program is at least 1 and at most 5,100,000, no matter in the compressed format or after it is decompressed to original format.

### Output

For each test case, print an integer  $K$  in a line meaning that the program is infected by  $K$  viruses.

**Hint:** In the second case in the sample input, the reverse of the program is 'GHIFEDCCBA', and 'GHI' is a substring of the reverse, so the program is infected by virus 'GHI'.

### Sample Input

```
3
2
AB
DCB
DACB
3
ABC
```

CDE  
GHI  
ABCCDEFIHG  
4  
ABB  
ACDEE  
BBB  
FEEE  
A[2B]CD[4E]F

### Sample Output

0  
3  
2