

Suffix Equal Prefix

There is a curious boy in Noapara village, his name is "MODON". He wrote a line of small letters only. Now, he want to know how many proper suffix is also prefix of that line. Proper suffix is a suffix of a text whose length is less than the original text. Now you have to help "MODON".

Input

Input starts with an integer **T** (≤ 50), denoting the number of test cases.

Each case contains a string **S** where $1 \leq \text{length}(\mathbf{S}) \leq 10^6$.

Output

For each case, print the case number and the answer .

Example

Input:

```
3
ababab
aaaa
abcabc
```

Output:

```
Case 1: 2
Case 2: 3
Case 3: 1
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