

# Palindromes

Given a string, you keep swapping any two characters in the string randomly till the string becomes a palindrome. What is the expected number of swaps you will make?

## Input

The first line contains the number of test cases T. Each of the next T lines contains a string each.

## Output

Output T lines containing the answer for the corresponding test case. Print the answer rounded to exactly 4 decimal places.

## Constraints:

$T \leq 10000$

The length of the string will be at most 8 characters.

The string will consist of only lower-case letters 'a'-'z'.

There will always be at least one palindrome which can be formed with the letters of the given string.

## Sample

### Input:

```
4
b
bb
abb
cbaabbb
```

### Output:

```
0.0000
0.0000
3.0000
59.3380
```

## Explanation

For the first two cases, the string is already a palindrome so no swaps are needed.

For the third case, there are 3 possible swaps. The string will become "bab", "bba" or remain "abb" with 1/3rd probability each. It's easy to see that the expected number of swaps needed is 3.0000

For the last case, the answer is 59.337962..., which should be printed as 59.3380