

World Finals 2010

A. Letter Stamper

- B. City Tour
- C. Candy Store
- D. Travel Plan
- E. Ninjutsu
- F. The Paths of Yin Yang

Contest Analysis

Questions asked

Submissions

Letter Stamper	
8pt	Not attempted 20/22 users correct (91%)
19pt	Not attempted 5/10 users correct (50%)
City Tour	
4pt	Not attempted 21/21 users correct (100%)
23pt	Not attempted 19/21 users correct (90%)
Candy Store	
7pt	Not attempted 21/21 users correct (100%)
20pt	Not attempted 12/13 users correct (92%)
Travel Plan	
3pt	Not attempted 22/23 users correct (96%)
30pt	Not attempted 17/18 users correct (94%)
Ninjutsu	
11pt	Not attempted 6/8 users correct (75%)
23pt	Not attempted 0/2 users correct (0%)
The Paths of Yin Yang	
17pt	Not attempted 1/2 users correct (50%)
35pt	Not attempted

Top Scores

Egor	125
krijgertje	114
Burunduk1	112
ACRush	106
marek.cygan	95
meret	95
rng..58	95
pashka	95
iwi	95
eatmore	94

Problem A. Letter Stamper

This contest is open for practice. You can try every problem as many times as you like, though we won't keep track of which problems you solve. Read the [Quick-Start Guide](#) to get started.

Small input
8 points

Solve A-small

Large input
19 points

Solve A-large

Problem

Roland is a high-school math teacher. Every day, he gets hundreds of papers from his students. For each paper, he carefully chooses a letter grade: 'A', 'B' or 'C'. (Roland's students are too smart to get lower grades like a 'D' or an 'F'). Once the grades are all decided, Roland passes the papers onto his assistant - you. Your job is to stamp the correct grade onto each paper.

You have a low-tech but functional letter stamp that you use for this. To print out a letter, you attach a special plate to the front of the stamp corresponding to that letter, dip it in ink, and then apply it to the paper.

The interesting thing is that instead of removing the plate when you want to switch letters, you can just put a new plate on top of the old one. In fact, you can think of the plates on the letter stamp as being a stack, supporting the following operations:

- Push a letter on to the top of the stack. (This corresponds to attaching a new plate to the front of the stamp.)
- Pop a letter from the top of the stack. (This corresponds to removing the plate from the front of the stamp.)
- Print the letter on the top of the stack. (This corresponds to actually using the stamp.) Of course, the stack must actually have a letter on it for this to work.

Given a sequence of letter grades ('A', 'B', and 'C'), how many operations do you need to print the whole sequence in order? The stack begins empty, and you must empty it when you are done. However, you have unlimited supplies of each kind of plate that you can use in the meantime.

For example, if you wanted to print the sequence "ABCCBA", then you could do it in 12 operations, as shown below:

Operation	Printed so far	Stack
0. -	-	-
1. Push A	-	A
2. Print	A	A
3. Push B	A	AB
4. Print	AB	AB
5. Push C	AB	ABC
6. Print	ABC	ABC
7. Print	ABCC	ABC
8. Pop	ABCC	AB
9. Print	ABCCB	AB
10. Pop	ABCCB	A
11. Print	ABCCBA	A
12. Pop	ABCCBA	-

Input

The first line of the input file contains the number of cases, **T**. **T** test cases follow, one per line. Each of these lines contains a single string **S**, representing the sequence of characters that you want to print out in order.

Output

For each test case, output one line containing "Case #x: N", where x is the case number (starting from 1) and N is the minimum number of stack operations required to print out **S**.

Limits

S is a non-empty string containing only the letters 'A', 'B', and 'C'.

Small dataset

1 ≤ **T** ≤ 100.
S has at most 100 characters.

Large dataset

$1 \leq T \leq 20$.

S has at most 7000 characters.

Sample

Input	Output
2	Case #1: 12
ABCCBA	Case #2: 13
AAABAAB	

All problem statements, input data and contest analyses are licensed under the [Creative Commons Attribution License](#).

© 2008-2017 Google [Google Home](#) - [Terms and Conditions](#) - [Privacy Policies and Principles](#)

Powered by



Google Cloud Platform