

Qualification Round 2017

[A. Oversized Pancake Flipper](#)**B. Tidy Numbers**[C. Bathroom Stalls](#)[D. Fashion Show](#)[Contest Analysis](#)[Questions asked](#)

Submissions

Oversized Pancake Flipper

5pt	Not attempted 19627/23633 users correct (83%)
10pt	Not attempted 17799/19074 users correct (93%)

Tidy Numbers

5pt	Not attempted 24252/26070 users correct (93%)
15pt	Not attempted 17755/22161 users correct (80%)

Bathroom Stalls

5pt	Not attempted 13982/16042 users correct (87%)
10pt	Not attempted 10822/13226 users correct (82%)
15pt	Not attempted 5954/8864 users correct (67%)

Fashion Show

10pt	Not attempted 996/2522 users correct (39%)
25pt	Not attempted 591/843 users correct (70%)

Top Scores

FatalEagle	100
ACMonster	100
y0105w49	100
johngs	100
HellKitsune123	100
SergeyRogulenko	100
spnautilus	100
BudAlNik	100
mjy0724	100
pwild	100

Problem B. Tidy Numbers

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
5 points

[Solve B-small](#)

Large input
15 points

[Solve B-large](#)

Problem

Tatiana likes to keep things tidy. Her toys are sorted from smallest to largest, her pencils are sorted from shortest to longest and her computers from oldest to newest. One day, when practicing her counting skills, she noticed that some integers, when written in base 10 with no leading zeroes, have their digits sorted in non-decreasing order. Some examples of this are 8, 123, 555, and 224488. She decided to call these numbers *tidy*. Numbers that do not have this property, like 20, 321, 495 and 999990, are not tidy.

She just finished counting *all* positive integers in ascending order from 1 to **N**. What was the last tidy number she counted?

Input

The first line of the input gives the number of test cases, **T**. **T** lines follow. Each line describes a test case with a single integer **N**, the last number counted by Tatiana.

Output

For each test case, output one line containing Case #x: y, where x is the test case number (starting from 1) and y is the last tidy number counted by Tatiana.

Limits

 $1 \leq T \leq 100$.

Small dataset

 $1 \leq N \leq 1000$.

Large dataset

 $1 \leq N \leq 10^{18}$.

Sample

Input	Output
4	Case #1: 129
132	Case #2: 999
1000	Case #3: 7
7	Case #4: 9999999999999999
111111111111111110	

Note that the last sample case would not appear in the Small dataset.

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