Qualification Round 2017

A. Oversized Pancake Flipper
**B. Tidy Numbers**
C. Bathroom Stalls
D. Fashion Show

Ask a question
View my submissions

Submissions

Oversized Pancake Flipper
5pt Correct **6364/8071 users** correct (79%)
10pt Time expired **5993 users** attempted

Tidy Numbers
5pt Not attempted **7753/8602 users** correct (90%)
15pt Not attempted **6426 users** attempted

Bathroom Stalls
5pt Not attempted **2760/3266 users** correct (85%)
10pt Not attempted **2166/2575 users** correct (84%)
15pt Not attempted **1751 users** attempted

Fashion Show
10pt Not attempted **180/420 users** correct (43%)
25pt Not attempted **158 users** attempted

Top Scores

| | |
|---|---|
| FatalEagle | 100 |
| ACMonster | 100 |
| y0105w49 | 100 |
| johngs | 100 |
| HellKitsune123 | 100 |
| kyc | 100 |
| SergeyRogulenko | 100 |
| spnautilus | 100 |
| BudAlNik | 100 |
| mjy0724 | 100 |

# Problem B. Tidy Numbers

Confused? Read the quick-start guide.

| | |
|---|---|
| Small input<br>5 points | Solve B-small<br>You may try multiple times, with penalties for wrong submissions. |
| Large input<br>15 points | You must solve the small input first.<br>You have 8 minutes to solve 1 input file. (Judged after contest.) |

## 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

$1 \le \mathbf{T} \le 100$.

## Small dataset

$1 \le \mathbf{N} \le 1000$.

## Large dataset

$1 \le \mathbf{N} \le 10^{18}$.

## Sample

| Input | Output |
|---|---|
| 4<br>132<br>1000<br>7<br>111111111111111110 | Case #1: 129<br>Case #2: 999<br>Case #3: 7<br>Case #4: 99999999999999999 |

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

Powered by

Google Cloud Platform