code jam
`System.out.println("hello, world!");`

Time Remaining: 18 hours 22 min   Rank: 752   Score: 51

scheeloong@gmail.com |
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Qualification Round 2015

A. Standing Ovation

B. Infinite House of Pancakes

C. Dijkstra

D. Ominous Omino

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Submissions

Standing Ovation

| 7pt | Correct **9959/11877 users** correct (84%) |
| 10pt | Submitted **9573 users** attempted |

Infinite House of Pancakes

| 9pt | Not attempted **1696/5242 users** correct (32%) |
| 12pt | Not attempted **1471 users** attempted |

Dijkstra

| 11pt | Not attempted **1140/1786 users** correct (64%) |
| 17pt | Not attempted **810 users** attempted |

Ominous Omino

| 8pt | Correct **940/1320 users** correct (71%) |
| 26pt | Submitted **496 users** attempted |

Top Scores

xiaowuc1	100
kyc	100
sevenkplus	100
cgy4ever	100
ksun48	100
Csirke	100
Progbeat	100
arthur.nascimento	100
eha	100

Problem A. Standing Ovation

Confused? Read the quick-start guide.

| Small input 7 points | You have solved this input set. |
| Large input 10 points | You have already tried this input set. (Judged at the end of the contest.) |

Problem

It's opening night at the opera, and your friend is the prima donna (the lead female singer). You will not be in the audience, but you want to make sure she receives a standing ovation -- with every audience member standing up and clapping their hands for her.

Initially, the entire audience is seated. Everyone in the audience has a *shyness level*. An audience member with shyness level S_i will wait until at least S_i other audience members have already stood up to clap, and if so, she will immediately stand up and clap. If $S_i = 0$, then the audience member will always stand up and clap immediately, regardless of what anyone else does. For example, an audience member with $S_i = 2$ will be seated at the beginning, but will stand up to clap later after she sees at least two other people standing and clapping.

You know the shyness level of everyone in the audience, and you are prepared to invite additional friends of the prima donna to be in the audience to ensure that everyone in the crowd stands up and claps in the end. Each of these friends may have any shyness value that you wish, not necessarily the same. What is the minimum number of friends that you need to invite to guarantee a standing ovation?

Input

The first line of the input gives the number of test cases, **T**. **T** test cases follow. Each consists of one line with S_{max}, the maximum shyness level of the shyest person in the audience, followed by a string of $S_{max} + 1$ single digits. The **k**th digit of this string (counting starting from 0) represents how many people in the audience have shyness level **k**. For example, the string "409" would mean that there were four audience members with $S_i = 0$ and nine audience members with $S_i = 2$ (and none with $S_i = 1$ or any other value). Note that there will initially always be between 0 and 9 people with each shyness level.

The string will never end in a 0. Note that this implies that there will always be at least one person in the audience.

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 minimum number of friends you must invite.

Limits

1 ≤ **T** ≤ 100.

darnley	100

Small dataset

$0 \le S_{max} \le 6$.

Large dataset

$0 \le S_{max} \le 1000$.

Sample

```
Input          Output

4              Case #1: 0
4 11111        Case #2: 1
1 09           Case #3: 2
5 110011       Case #4: 0
0 1
```

In Case #1, the audience will eventually produce a standing ovation on its own, without you needing to add anyone -- first the audience member with $S_i = 0$ will stand up, then the audience member with $S_i = 1$ will stand up, etc.

In Case #2, a friend with $S_i = 0$ must be invited, but that is enough to get the entire audience to stand up.

In Case #3, one optimal solution is to add two audience members with $S_i = 2$.

In Case #4, there is only one audience member and he will stand up immediately. No friends need to be invited.