GCJ1C09A - All Your Base

no tags

Problem

In A.D. 2100, aliens came to Earth. They wrote a message in a cryptic language, and next to it they wrote a series of symbols. We've come to the conclusion that the symbols indicate a number: the number of seconds before war begins!

Unfortunately we have no idea what each symbol means. We've decided that each symbol indicates one digit, but we aren't sure what each digit means or what base the aliens are using. For example, if they wrote "ab2ac999", they could have meant "31536000" in base 10 -- exactly one year -- or they could have meant "12314555" in base 6 -- 398951 seconds, or about four and a half days. We are sure of three things: the number is positive; like us, the aliens will never start a number with a zero; and they aren't using unary (base 1).

Your job is to determine the minimum possible number of seconds before war begins.

Input

The first line of input contains a single integer, **T**. **T** test cases follow. Each test case is a string on a line by itself. The line will contain only characters in the 'a' to 'z' and '0' to '9' ranges (with no spaces and no punctuation), representing the message the aliens left us. The test cases are independent, and can be in different bases with the symbols meaning different things.

Output

For each test case, output a line in the following format:

```
Case #X: V
```

Where **X** is the case number (starting from 1) and **V** is the minimum number of seconds before war begins.

Limits

$1 \leq \mathbf{T} \leq 100$
The answer will never exceed 10^{18}

1 ≤ the length of each line < 61

Sample

Input Output

```
3
11001001 Case #1: 201
cats     Case #2: 75
zig      Case #3: 11
```

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Gowtham.R (/users/debug_g): 2015-07-09 22:15:43
Finally After 5 WAs
AC :D

devil (/users/illuminati503): 2015-07-02 00:26:41
brilliant question.....felt great after solving this one....!!! :)

Anchrondite (/users/segnateai): 2015-03-31 20:25:59
Do not even think to use pow function here got two wrong answers for me due to conversion between double and unsigned long long int .

Bharath Reddy (/users/bharath270392): 2014-09-30 18:10:01
Read the "We are sure of three things.." part very very carefully

PurvaBaradia (/users/purva_08): 2014-08-24 06:34:59

Last edit: 2014-08-25 04:35:42

Siya (/users/behappy): 2014-08-23 18:10:18
Very good problem ,Missing single point can leads to WA..

Flago (/users/spartadraph): 2014-02-27 16:34:41
I have no idea why my PHP give NZEC while it output the same as my C++, and run fine on ideone or in local. Maybe SPOJ doesn't support GMP functions ? Too bad, Limits could get much much higher :

Input : (a to z) 100 times (2600 letters)
Output : Int with 3678 digits :D

Last edit: 2014-02-27 16:38:40

Martijn Muijsers (/users/infima): 2013-10-29 14:00:04
Oh dear... that is just SO incredibly evil. Getting this question right depends on reading the description VEEERY carefully. Damn you problem setter, you almost got me! Great prob :)

Aditya Pande (/users/adityapande): 2013-10-25 08:50:19
This kind of output format has cost me so many WA's
Why not just print the number....
why?

metalbird (/users/metalbird): 2013-08-25 18:09:11
getting correct output for every input, still WA....! suggest any special test cases...

Submit solution! (/submit/GCJ1C09A/)

Added by:	Shafaet (/users/shafaet_csedu)
Date:	2013-05-07
Time limit:	20s
Source limit:	50000B
Memory limit:	1536MB
Cluster:	Cube (Intel G860) (/clusters/)
Languages:	All except: ASM64
Resource:	Google Codejam 2009, Round 1C, Problem A