

8210 New Self-describing Sequence

Let a_1, a_2, \dots be an integer sequence beginning with $a_1 = 1$. For $n \geq 1$, a_{n+1} is the sum of a_n and the sum of digits of a_n . That's why we name the sequence a new Self-describing sequence.

The sequence starts with 1, 2, 4, 8, 16, 23, 28, 38, 49, ... and we also define the prefix sum $s_n = a_1 + a_2 + \dots + a_n$.

For given positive integer n , find a_n and s_n .

Input

The first line of input consists an integer T ($T \leq 32768$), indicating the total number of test cases. Each of the following T lines provides an integer n ($n \leq 10^{17}$).

Output

For each test case output its case label first. Then for given n , output a_n and s_n . Since the prefix sum is large, you only need to output $s_n \bmod 1000000009$.

However you should output a_n as its exact value.

Sample Input

```
7
6
66
666
6666
66666
123456789
31415926535897932
```

Sample Output

```
Case #1: 23 54
Case #2: 752 20862
Case #3: 10949 3407733
Case #4: 136193 441127485
Case #5: 1698899 717710112
Case #6: 5061289531 990040993
Case #7: 2508156610654066874 660828136
```