Problem J. New Self-describing Sequence

Let $a_1, a_2, \cdots$ 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 $1, 2, 4, 8, 16, 23, 28, 38, 49, \cdots$ and we also define the prefix sum $s_n = a_1 + a_2 + \cdots + a_n$. 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 *mod* 1000000009. However you should output a_n as its exact value.

Sample

7 6 66 666 6666 66666 123456789 31415926535897932	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

This page intentionally left blank.