

7678 JiLi Number

Driver Ji likes the digit “1”. He has an accumulator which shows the sum of input number. He lists all of positive number no more than N and starts counting from one, two, three ... Every time he counts a number he will add the number of digit “1” in this number to accumulator at the same time. The amazing thing happens! At some times, when he finishes counting a number X , the number which on the accumulator is X exactly, he will regard X as “JiLi Number” which means lucky number. Now he wants to know the number of “JiLi Numbers” and the biggest “JiLi Number” no more than N .

Input

There are several test cases and the each test case is a line contains an positive integer N , ($1 < N \leq 10^{100}$)

Output

For each test case, output two integers which donates the number of “JiLi Numbers” and the biggest “JiLi Number”.

Sample Input

```
1
100000000000
```

Sample Output

```
1 1
83 1111111110
```