

Broke Sparsh



Sparsh is broke and doesn't have the money to buy a good phone. He resorts to ordering a phone from a weird chinese manufacturer. This phone has a special feature: if he enters the reverse of his phone passcode, the phone gets completely wiped out. This may seem like a convinient feature but the problem arises when users have passcodes that are the same when reversed (Palindromes). In this case, every time the user tries to enter his passcode, the phone will get wiped out.

You know that a passcode consists of N decimal digits. Find the probability that Sparsh could set a passcode that wipes his phone everytime. Specifically, it can be proven that this probability can be written as a fraction P/Q , where $P \geq 0$ and $Q > 0$ are coprime integers; you should compute P and Q .

For example, If the pin is 123, the phone will get wiped out when he enters 321 But if the pin is 121, the reverse of it is also 121, and his phone will get wiped out every time he tries to unlock it.

Input Format

- The first line of the input contains a single integer T denoting the number of test cases. The description of T test cases follows.
- The first and only line of each test case contains a single integer N denoting the length of each PIN.

Constraints

- $1 \leq T \leq 100$
- $1 \leq N \leq 105$

Output Format

For each test case, print a single line containing two space-separated integers — the numerator P and denominator Q of the probability.

Sample Input 0

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2
3
6
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Sample Output 0

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1 10
1 1000
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