

B: Digit permutation

Given a base-16 integer with N digits, how many unique integers, with N digits and no leading zeros, can you generate by re-arranging its digits. For example, for integer 18F there are 6 unique integers:

18F
1F8
81F
8F1
F18
F81

} permutations

Constraints : $1 \leq n \leq 19$

Input

Input begins with T , indicating the number of test cases. On the following T lines, each test case begins with an integer N followed by a base-16 integer with N digits.

Output

For each test case, output a single integer with the answer.

Sample Input

```
7
3 18F
3 108
1 B
4 1001
5 11111
4 1234
10 122356FCA9
```

Sample Output

```
6
4
1
3
1
24
1814400
```