

## 1021 - Painful Bases

As you know that sometimes base conversion is a painful task. But still there are interesting facts in bases.

For convenience let's assume that we are dealing with the bases from 2 to 16. The valid symbols are **0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E and F**. And you can assume that all the numbers given in this problem are valid. For example **67AB** is not a valid number of base **11**, since the allowed digits for base **11** are **0 to A**.

Now in this problem you are given a base, an integer **K** and a valid number in the base which contains distinct digits. You have to find the number of permutations of the given number which are divisible by **K**. **K** is given in decimal.

For this problem, you can assume that numbers with leading zeroes are allowed. So, **096** is a valid integer.

### Input

Input starts with an integer **T** ( $\leq 100$ ), denoting the number of test cases.

Each case starts with a blank line. After that there will be two integers, **base** ( $2 \leq \text{base} \leq 16$ ) and **K** ( $1 \leq K \leq 20$ ). The next line contains a valid integer in that base which contains distinct digits, that means in that number no digit occurs more than once.

### Output

For each case, print the case number and the desired result.

Sample Input	Output for Sample Input
3	Case 1: 1
2 2	Case 2: 12
10	Case 3: 20922789888000
10 2	
5681	
16 1	
ABCDEF0123456789	