J	**Base of MJ** **Input:** Standard Input **Output:** Standard Output	

We know, if we want to check whether a decimal number is divisible by **3**, we need to find the sum of digits of that number. If the sum is divisible by **3**, then the original number will also be divisible by **3**.

It took me a while to prove this. And then I realized this is true not only for **3** but for some other numbers as well. Sometimes not **only** for decimals but **also** for numbers in other bases as well. Can you find them?

In particular, given a particular divisor **D**, you will have to find how many valid different bases B, less or equal to BMAX, are possible such that when we represent any number N in base B and the sum of digits of N is **S**, the following implication is true:

N is divisible by D IF AND ONLY IF S is divisible by D.

For example, if **BMAX = 10**, **D = 3**, the answer is **3**. The bases are **4**, **7** and **10**.

Input

First line will contain **T (T ≤ 10000)**, no of test cases. **T** lines will follow each with two integers **BMAX (2 ≤ BMAX ≤** $\mathbf{10^{18}}$**)** and **D (1 ≤ D ≤** $\mathbf{10^{18}}$**)**. You can assume that base of a number system is positive and not less than 2.

Output

For each case print one line, "**Case C: A**", where **C** is the case no and **A** is the required answer. Look at the output for sample input for details.

Sample Input	Output for Sample Input
2 10 3 20 3	Case 1: 3 Case 2: 6