

FizzBuzz

You are likely very familiar with **FizzBuzz** – a basic introductory programming exercise: Given a positive integer n , print the positive integers from 1 to n sequentially. However, for numbers divisible by 3, print the string `fizz` instead of the number; for numbers divisible by 5, print the string `buzz` instead of the number. For numbers divisible by both 3 and 5, print the string `fizzbuzz`. For example, with $n = 16$, the output should be:

```
1 2 fizz 4 buzz fizz 7 8 fizz buzz 11 fizz 13 14 fizzbuzz 16
```

MofK is preparing a programming exercise for an introductory class. Since the class has not yet learned about loops, MofK modifies the FizzBuzz problem as follows:

Given three positive integers n , a , and b , output:

- `fizzbuzz` if n is divisible by both a and b ,
- `fizz` if n is divisible by a but not by b ,
- `buzz` if n is divisible by b but not by a ,
- the value of n itself if n is divisible by neither a nor b .

It is guaranteed that $1 \leq n \leq 10^9$ and $1 \leq a < b \leq 10^9$.

After drafting the problem, MofK prepares the test cases and goes to sleep.

The next morning, upon arriving at class, MofK is astonished to discover that the test cases prepared the previous day were faulty! The input only contains the correct number n instead of the three numbers n , a , and b .

Given n and the expected result, MofK needs to quickly find two numbers a and b such that the result matches the expected one. Help MofK write a program that can run before class starts!

Input

The first line contains a single integer t ($1 \leq t \leq 10^5$) – the number of test cases. Each of the next t lines contains a positive integer n ($1 \leq n \leq 10^9$) and the string representing the expected result. It is guaranteed that the expected result is one of the strings `fizz`, `buzz`, `fizzbuzz`, or the number n .

Output

For each test case, print two positive integers a and b that satisfy $1 \leq a < b \leq 10^9$ such that running the original program with inputs n , a , and b produces the expected output. If no such a and b exist, print `-1 -1`.

If there are multiple answers, you can print any of them.

Sample Input 1

```
3
3 fizz
4 4
15 fizzbuzz
```

Sample Output 1

```
3 5
3 5
3 5
```