# Ranjan's Ex-OR Dilemma

HackerRank

`Time Limit: 2 seconds`

`Memory Limit: 256MB`

The *tea* on Ranjan *bhaiya* is legendary. We all know about his "tragic" school breakup. But the real *hot tea* isn't that he broke up; it's that it took him **forever** to move on.

Why? Because Ranjan is the President of the "Lazy Geniuses" club.

Instead of just going to the gym or blocking her number like a normal person, he convinced himself that he could only "officially" move on if he solved a complex "Closure Equation" involving the memory of his ex (represented by the integer $c$).

He needs to find two new hobbies, $a$ and $b$, that satisfy a perfectly balanced, yet needlessly complicated, mathematical condition. But here's the catch: **Ranjan is too lazy to actually do the math.** He would rather stay in bed.

He needs you to find the numbers for him so he can finally close this chapter and go back to sleep.

You are given a positive integer $c$ ($1 \leq c \leq 10^7$), representing the "Memory Constant."

You need to find **any** two positive integers $a$ and $b$ such that they satisfy the "Closure Equation":

$$(a \oplus c) + (b \oplus c) = \text{lcm}(a, c) + \text{lcm}(b, c)$$

Where:

- $\oplus$ denotes the bitwise XOR operator.
- $\text{lcm}(x, y)$ denotes the lowest common multiple of $x$ and $y$.
- The values of $a$ and $b$ must satisfy $1 \leq a, b \leq 10^{17}$.

*Note: It can be proven that a solution always exists under the given constraints.*

**Input Format**

- The first line of input contains a single integer $T$ — the number of test cases.
- Each test case consists of a single line containing one integer $c$.

**Constraints**

- $1 \leq T \leq 10^5$
- $1 \leq c \leq 10^7$

**Output Format**

- For each test case, output two space-separated integers $a$ and $b$ that satisfy the equation.
- If there are multiple valid pairs, you may output **any** of them.

**Sample Input 0**

```
3
1
2
7
```

**Sample Output 0**

```
88 71
80 62
1 35
```

**Explanation 0**

In the first test case, we are given $c = 1$. The sample output shows $a = 88$ and $b = 71$. Let's verify if this satisfies Ranjan's "Closure Equation."

The equation is:

$$(a \oplus c) + (b \oplus c) = \text{lcm}(a, c) + \text{lcm}(b, c)$$

**Step 1: Calculate the Left Hand Side (LHS)**

- $88 \oplus 1 = 89$
- $71 \oplus 1 = 70$
- **LHS** $= 89 + 70 = 159$

**Step 2: Calculate the Right Hand Side (RHS)**

- $\text{lcm}(88, 1) = 88$
- $\text{lcm}(71, 1) = 71$
- **RHS** $= 88 + 71 = 159$

Since $\text{LHS} = \text{RHS}$, the pair $(88, 71)$ is a valid solution.

**Note:** This problem allows multiple correct answers. For $c = 1$, other pairs like `1 35` or `2 3` are also valid. Your output is correct as long as it satisfies the equation.