7974 Long Integer Factoring

I like number theory very much, especially I like factoring integers. Factoring long integers gives me very exciting pleasure, but it is often hard task.

My teacher gives a new factoring task — "Given integer N, you must factor the big integer N^4+64."

In the first step, I want to express N^4+64 as a product of 2 integers a b. Of course, $1 < a, b < N^4+64$ must hold.

I can do it but now I'm very busy. Can you help me?

Input

The first line contains one integer T $(1 \leq T \leq 10000)$ — indicating the number of test cases.

Each test case contains one integer N $(1 \leq N \leq 10000)$.

Output

Print a and b satisfies $N^4 + 64 = a * b$. If there are several solutions, print any of them.

Sample Input

```
1
1
```

Sample Output

```
5 13
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