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A. Square Year

time limit per test: 1 second
memory limit per test: 256 megabytes

One can notice the following remarkable mathematical fact: the number 2025 *can be represented as* $(20+25)^2$.

You are given a year represented by a string s, consisting of exactly 4 characters. Thus, leading zeros are allowed in the year representation. For example, "0001", "0185", "1375" are valid year representations. You need to express it in the form $(a+b)^2$, where a and b are **non-negative integers**, or determine that it is impossible.

For example, if s = "0001", you can choose $a=0$, $b=1$, and write the year as $(0+1)^2=1$.

Input

The first line of the input contains a single integer t ($1 \le t \le 10^4$) — the number of test cases.

The following lines describe the test cases.

The only line of each test case contains a string s, consisting of exactly 4 characters. Each character is a digit from 0 to 9.

Output

On a separate line for each test case, output:

- Two numbers a and b ($a, b \ge 0$) such that $(a+b)^2 = s$, if they exist. If there are multiple suitable pairs, you may output any of them.
- The number -1 otherwise.

Example

input Copy

```
5
0001
1001
1000
4900
2025
```

output Copy

```
0 1
-1
-1
34 36
20 25
```