Problem E
Etched Emerald Orbs

Time limit: 3 seconds

Memory limit: 1024 megabytes

Problem Description

An archaeologist team found a tomb of the ancient tribe and discovered 2^{125} emerald orbs inside the tomb. The ancient tribe etched a numbers on each emerald orb. The archeologists spent two decades realizing that the ancient tribe etched each emerald orb with a unique number. Moreover, the numbers are from 1 to 2^{125} in the ancient language.

Eddy, the only mathematician in the archaeologist team, recently figured out the relation between the number k and the emerald orb numbered k. The weight of the emerald orb numbered k is exactly $\frac{1}{k}$ grams. Since the number on each emerald orb is distinct from the number on any other emerald orb, there are no two emerald orbs having the same weight.

Eddy proposes a hypothesis: the ancient tribe used these emerald orbs to represent weight less than 1 gram. It is trivial that the emerald orb numbered k can represent $\frac{1}{k}$ gram. Then, Eddy tries to represent $\frac{2}{k}$ grams for $3 \leq k \leq 4 \times 10^{18}$ with two emerald orbs. He successfully finds that the emerald orbs numbered 2 and 6 can represent $\frac{2}{3} = \frac{1}{2} + \frac{1}{6}$ grams. Similarly, the emerald orbs numbered 3 and 15 can represent $\frac{2}{5} = \frac{1}{3} + \frac{1}{15}$ grams.

Can you write a program to help Eddy to check whether two emerald orbs can represent $\frac{2}{k}$ grams for a given integer k? If there are multiple combinations of two emerald orbs representing $\frac{2}{k}$ grams, output the combination minimizing the sum of the numbers etched on them. If there is no such combination, output `-1`.

Input Format

The input contains only one positive integer k.

Output Format

If there is no solution, output `-1`. Otherwise, output two distinct integers x and y separated by a blank where $\frac{2}{k} = \frac{1}{x} + \frac{1}{y}$ and $1 \leq x < y \leq 2^{125}$. If there are multiple solutions, output the solution minimizing $x + y$.

Technical Specification

- $3 \leq k \leq 4 \times 10^{18}$.

Sample Input 1

```
5
```

Sample Output 1

```
3 15
```

Sample Input 2

```
7
```

Sample Output 2

```
4 28
```