Example Problem 1.1: Lamp and Buttons

Time limit: 1 second
Memory limit: 64 MB

There are N buttons numbered from 1 to N and a lamp that is initially turned off. When the i-th button is pressed, the state of the lamp (off $\leftrightarrow$ on) will toggle *if and only if* N is divisible by i. If each button is pressed exactly once, what will be the final state of the lamp?

Input Format

A single line containing one integer N.

Output Format

A single line containing:

- `lamp off`, if the lamp ends up turned off.
- `lamp on`, if the lamp ends up turned on.

Sample Input 1

```
5
```

Sample Output 1

```
lamp off
```

Sample Input 2

```
4
```

Sample Output 2

```
lamp on
```

Explanation

In the first example, the buttons that affect the lamp are buttons 1 and 5. Pressing button 1 turns the lamp on, and pressing button 5 turns it back off.

In the second example, the buttons that affect the lamp are buttons 1, 2, and 4. Pressing button 1 turns the lamp on, pressing button 2 turns it off again, and pressing button 4 turns it back on.

Constraints

$$1 \leq N \leq 10^{18}$$