Factorial numbers are expressible as the multiplication of zero or more prime factors. For example 4! (Factorial of 4) can be expressed as follows:

$$4! = 2 \times 2 \times 2 \times 3 \text{ (total number of prime factor is 4)}$$

Given N, the number of prime factors in $X!$ (Factorial of X), you have to find the minimum possible value of X.

Input

There may be at most 1000 test cases. Each test case consists of one non-negative integer $N \leq 10000001$ in each line. A negative integer marks the end of input, which should not be processed by your program.

Output

For every test case except last one print either '`Case #: X!`' if solution exist or '`Case #: Not possible.`' if no solution exist in each line (without the quotes). Here # represents serial of test case starting from 1. Look at sample output for details.

Sample Input

```
4
240
241
-1
```

Sample Output

```
Case 1: 4!
Case 2: 101!
Case 3: Not possible
```