12934   Factorial Division

Given two positive integers n, m, find out $n!/m!$, where $n! = 1 * 2 * 3 * \ldots * n$ ($n \geq 1$).

For example, if $n = 6$, $m = 3$, $6!/3! = 720/6 = 120$.

Easy, right? Now let's do the reverse: given $k = n!/m!$, find out the pair (n, m) ($n > m \geq 1$).

If there is more than one solution, n should be as small as possible. For example, if $k = 120$, the answer should be $n = 5$ and $m = 1$, not $n = 6$ and $m = 3$, because $5!/1! = 6!/3! = 120$, and $5 < 6$.

Input

There will be at most 100 test cases. Each test case contains one integer k ($1 \leq k \leq 10^9$).

Output

For each test case, print two integers n and m. If there is no solution, print 'Impossible'. If there is more than one solution, n should be as small as possible.

Sample Input

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120
1
210
```

Sample Output

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Case 1: 5 1
Case 2: Impossible
Case 3: 7 4
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