Just Equal

Description

hanhan loves numbers much, especially positive integers.

Today, hanhan plays with positive integers again. He finds that $2 + 2 = 2 \times 2$. hanhan thinks it's unbelievably interesting. However, he can't find any other example with the same property. Thus, he asks you to help him.

Formally, hanhan will give you an integer N. You should find N positive integers $a_1, a_2, \ldots, a_N$ such that $a_1 + a_2 + \cdots + a_N = a_1 \times a_2 \times \cdots \times a_N$, equivalently, $\sum_{i=1}^{N} a_i = \prod_{i=1}^{N} a_i$. However, hanhan can't handle big numbers. Thus, all the numbers you find should be less than or equal to 10^9. If under this limitation, there isn't any solution, you should also tell hanhan this sad thing.

Input

The first line contains an integer T indicating the total number of test cases. Each test case contains one lines with an integer N.

- $1 \leq T \leq 1021$
- $1 \leq N \leq 1021$

Output

For each test case, please output N positive integers $a_1, a_2, \ldots, a_N$ satisfying the equation. Otherwise, output `-1` in one line.

If there are multiple solutions, you can output any one of them.

Sample Input

```
2
1
2
```

Sample Output

```
1
2 2
```