Planetarium Problem

As every year, the local planetarium runs a series of practical courses and internships which are free for the public. However, as the number of interested people was at a record high last year and is expected to rise yet again this time, the planetarium has decided to have trials in order to find out which people are actually taking part. Lea has always had a great interest in astronomy and astrophysics, so she likes to take part in some courses to learn more about the great mysteries of the universe. The task she is assigned is fairly simple: she is given a number of astronomical objects and has to decide in how many clusters this vast amount of objects can be divided. The restriction for the division is that all clusters must be of equal size and that no cluster can be subdivided any further into smaller clusters of equal size, except for trivial clusters of size 1. Lea has thought about the problem a lot, but cannot quite get to a point where she can decide how to do it efficiently. As usual, she asks you for help. What is your answer?

Input

The first line of the input contains an integer t. t test cases follow.

Each test case consists of only one integer n, the number of astronomical objects considered.

Output

For each test case, output one line containing "Case #i:" where i is its number, starting at 1, and a sequence of all possible cluster sizes, in increasing order, separated by spaces.

Constraints

- $1 \leq t \leq 20$
- $1 \leq n \leq 10^{85}$

Sample Input 1

```
2
16445
357
```

Sample Output 1

```
Case #1: 1 5 11 13 23
Case #2: 1 3 7 17
```

Sample Input 2

```
7
563233
41578
15789543
44155578
1574682
852636
19
```

Sample Output 2

```
Case #1: 1 11 51203
Case #2: 1 2 20789
Case #3: 1 3 7 11 29 2357
Case #4: 1 2 3 37 198899
Case #5: 1 2 3 19 727
Case #6: 1 2 3 41 1733
Case #7: 1 19
```