

Little Hasan loves to play number games with his friends. One day they were playing a game where one of them will speak out a positive number and the others have to tell the sum of its factors. The first one to say it correctly wins. After a while they got bored and wanted to try out a different game. Hassan then suggested about trying the reverse. That is, given a positive number  $S$ , they have to find a number whose factors add up to  $S$ . Realizing that this task is tougher than the original task, Hasan came to you for help. Luckily Hasan owns a portable programmable device and you have decided to burn a program to this device. Given the value of  $S$  as input to the program, it will output a number whose sum of factors equal to  $S$ .

## Input

Each case of input will consist of a positive integer  $S \leq 1000$ . The last case is followed by a value of '0'.

## Output

For each case of input, there will be one line of output. It will be a positive integer whose sum of factors is equal to  $S$ . If there is more than one such integer, output the largest. If no such number exists, output '-1'. Adhere to the format shown in sample output.

## Sample Input

```
1
102
1000
0
```

## Sample Output

```
Case 1: 1
Case 2: 101
Case 3: -1
```