11728 Alternate Task

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
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