

We all know that any integer number N is divisible by 1 and N . That is why these two numbers are not the actual divisors of any numbers. The function $SOD(n)$ (Sum of divisors) is defined as the summation of all the actual divisors of an integer number n . For example $SOD(24)=2+3+4+6+8+12=35$. The function $CSOD(n)$ (cumulative SOD) of an integer n , is defined as below:

$$CSOD(n) = \sum_{i=1}^{i=n} SOD(i)$$

Given the value of n , your job is to find the value of $CSOD(n)$.

Input

The input file contains at most 50 lines of input. Each line contains an integer n ($0 \leq n \leq 2000000000$). Input is terminated by a line where the value of $n = 0$. This line should not be processed.

Output

For each line of input produce one line of output. This line should contain the serial of output followed by the value of $CSOD(n)$. Look at the output for sample input for details. You can safely assume that any output number fits in a 64-bit signed integer.

Sample Input

```
2
100
200000000
```

Sample Output

```
Case 1: 0
Case 2: 3150
Case 3: 12898681201837053
```