Problem C: Selfdescribing Sequence

Solomon Golomb's *selfdescribing sequence* $\langle f(1), f(2), f(3), \ldots \rangle$ is the only nondecreasing sequence of positive integers with the property that it contains exactly $f(k)$ occurrences of k for each k. A few moments thought reveals that the sequence must begin as follows:

n	1	2	3	4	5	6	7	8	9	10	11	12
$f(n)$	1	2	2	3	3	4	4	4	5	5	5	6

In this problem you are expected to write a program that calculates the value of $f(n)$ given the value of n.

Input

The input may contain multiple test cases. Each test case occupies a separate line and contains an integer n ($1 \leq n \leq 2,000,000,000$). The input terminates with a test case containing a value 0 for n and this case must not be processed.

Output

For each test case in the input output the value of $f(n)$ on a separate line.

Sample Input

```
100
9999
123456
1000000000
0
```

Sample Output

```
21
356
1684
438744
```