

Ugly Numbers

Ugly numbers are numbers whose only prime factors are 2, 3 or 5. The sequence

1, 2, 3, 4, 5, 6, 8, 9, 10, 12, 15, ...

shows the first 11 ugly numbers. By convention, 1 is included.

Write a program to find and print the n 'th ugly number.

Input

The input consists of a series of lines, each line containing a number N . N will be in the range $1 \leq N \leq 1000$. The input will be terminated by a line consisting of a single 0.

Output

For each N output the N -th ugly number on its own line.

Sample Input

```
1
2
3
4
7
11
0
```

Sample Output

```
1
2
3
4
8
15
```