Amtel has announced that it will release a 128-bit computer chip by 2010, a 256-bit computer by 2020, and so on, continuing its strategy of doubling the word-size every ten years. (Amtel released a 64-bit computer in 2000, a 32-bit computer in 1990, a 16-bit computer in 1980, an 8-bit computer in 1970, and a 4-bit computer, its first, in 1960.)

Amtel will use a new benchmark – the *Factstone* – to advertise the vastly improved capacity of its new chips. The *Factstone* rating is defined to be the largest integer n such that $n!$ can be represented as an unsigned integer in a computer word.

Given a year $1960 \leq y \leq 2160$, what will be the *Factstone* rating of Amtel's most recently released chip?

Input

There are several test cases. For each test case, there is one line of input containing y. A line containing '0' follows the last test case.

Output

For each test case, output a line giving the Factstone rating.

Sample Input

```
1960
1981
0
```

Sample Output

```
3
8
```