**X-factor Chains**

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| --- | --- | --- |
| **Time Limit:** 1000MS |  | **Memory Limit:** 65536K |
|  |  |  |

**Description**

Given a positive integer *X*, an *X*-factor chain of length *m* is a sequence of integers,

1 =*X*0, *X*1, *X*2, …, *Xm*=*X*

satisfying

*Xi* < *Xi*+1 and *Xi* | *Xi*+1 where *a* | *b* means *a* perfectly divides into *b*.

Now we are interested in the maximum length of *X*-factor chains and the number of chains of such length.

**Input**

The input consists of several test cases. Each contains a positive integer *X* (*X* ≤ 220).

**Output**

For each test case, output the maximum length and the number of such *X*-factors chains.

**Sample Input**

2

3

4

10

100

**Sample Output**

1 1

1 1

2 1

2 2

4 6

**Source**

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