A. Exponential Algorithms

time limit per test: 1 s.
memory limit per test: 256 MB

CHAR is crazy about new algorithms!

At first, CHAR doesn't know any algorithm. Then, each time he comes to CS491 (assuming he takes CS491 once a day), he can choose to learn an arbitrary number of algorithms. Each night, for each algorithm he already knows, he will come up with a new algorithm. He wants to know exactly x algorithms at some moments.

At least how many algorithms does he need to learn DIRECTLY from CS491?

Input
The only line containing one integer x ($1 \le x \le 10^9$).

Output
The only line containing one integer: the answer.

Examples

input	Copy
5	
output	**Copy**
2	

input	Copy
8	
output	**Copy**
1	

Note
First sample: Day 1 learn 1 algorithm. Day 3 learn 1 algorithm. At day 3, the algorithm learned in day 1 will now be 4 algorithms. Combined with the algorithm learned in day 3, CHAR knows 5 algorithms. CHAR learned 2 algorithms directly from CS491, so the final answer is 2.

Second sample: Day 1 learn 1 algorithm. CHAR will know 8 algorithms in the morning of day 4. So the answer is 1.

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- Convex Hull - Preclass
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- Line Sweep - Preclass
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- Geometry - Homework
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- DP TSP - Homework
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