

Task C02. GUESS

 1 sec.  1024 MB

Write a program **guess** to find the unknown number (for you) that the jury has in mind. It is always positive. You have to guess it by asking questions "Is the jury's number less than x ?".

Implementation details

You should implement the function `find_number`:

```
int find_number(int MAX)
```

- MAX : the maximum possible value for the jury's number.

This function is called once for each test case and has to return the found unknown number. In order to do this, your program can call the jury function `smaller`:

```
bool smaller(int x)
```

- x : the number in your question.

The function returns `true` if the unknown jury number is less than x and returns `false` otherwise.

Constraints and scoring

- $1 \leq MAX \leq 10^9$
- Your points for one test are determined by the formula: $\min(\frac{\lfloor \log_2 MAX \rfloor + 1}{c}, 1) \times t$, where c is the number of calls to function `smaller` and t is the maximum number of points given for the test.

Sample interaction

Let MAX be 5 and the unknown jury number be 3.

Contestant action	Jury's action	Explanation
-	<code>find_number(5)</code>	-
<code>smaller(1)</code>	<code>false</code>	3 is not less than 1.
<code>smaller(2)</code>	<code>false</code>	3 is not less than 2.
<code>smaller(3)</code>	<code>false</code>	3 is not less than 3.
<code>smaller(4)</code>	<code>true</code>	3 is less than 4. Here it can be concluded that the unknown number is 3.
<code>return 3</code>	-	-

Sample grader

Input format:

- line 1: two integers - the maximal possible value and the jury's number.

Output format:

- line 1: one integer - the return value of the call.