

A. Cirno's Perfect Bitmasks Classroom

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

Even if it's a really easy question, she won't be able to answer it
— *Perfect Memento in Strict Sense*

Cirno's perfect bitmasks classroom has just started!

Cirno gave her students a positive integer x . As an assignment, her students need to find the **minimum positive** integer y , which satisfies the following two conditions:

$x \text{ and } y > 0$
 $x \text{ xor } y > 0$

Where **and** is the [bitwise AND operation](#), and **xor** is the [bitwise XOR operation](#).

Among the students was Mystia, who was truly baffled by all these new operators. Please help her!

Input
The first line of input contains a single integer t ($1 \leq t \leq 10^3$) — the number of input test cases.

For each test case, the only line of input contains one integer x ($1 \leq x \leq 2^{30}$).

Output
For each test case, print a single integer — the minimum number of y .

Example

inputCopy

7
1
2
5
9
16
114514
1000000

outputCopy

3
3
1
1
17
2
64

Note
Test case 1:
 $1 \text{ and } 3 = 1 > 0, 1 \text{ xor } 3 = 2 > 0$.

Test case 2:
 $2 \text{ and } 3 = 2 > 0, 2 \text{ xor } 3 = 1 > 0$.

Codeforces Round 796 (Div. 2)

Finished

Practice

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
269348282	Jul/08/2024 07:11	Wrong answer on test 1
269348140	Jul/08/2024 07:10	Wrong answer on test 1
269347994	Jul/08/2024 07:08	Wrong answer on test 1
234330001	Nov/25/2023 23:48	Accepted
234329965	Nov/25/2023 23:48	Wrong answer on test 1
234327489	Nov/25/2023 23:14	Accepted
234327444	Nov/25/2023 23:13	Compilation error

→ Problem tags

bitmasksbrute force*800

No tag edit access

→ Contest materials

Codeforces Round #796 (en)

Tutorial (en)