

G. Flip the Bits

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

You are given a positive integer n . Your task is to build a number m by flipping the minimum number of bits in the binary representation of n such that m is less than n ($m < n$) and it is as maximal as possible. Can you?

Input

The first line contains an integer T ($1 \leq T \leq 10^5$) specifying the number of test cases.

Each test case consists of a single line containing one integer n ($1 \leq n \leq 10^9$), as described in the statement above.

Output

For each test case, print a single line containing the minimum number of bits you need to flip in the binary representation of n to build the number m .

Example

input	Copy
2	
5	
10	
output	Copy
1	
2	

Training Camp UNAL 2021

Public

Participant



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I miss me spider

Day 1

Contest is running

01:52:06

Contestant



→ Submit?

Language: GNU G++17 7.3.0

Choose file: Seleccionar archivo No s...chivo

Submit

→ Last submissions

Submission	Time	Verdict
106317578	Feb/02/2021 23:19	Accepted

