

# DMOPC '16 Contest 4 P1 - Fast Exponents

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**Time limit:** 2.0s    **Memory limit:** 64M

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Molly's teacher assigned her very tedious homework:

Given an integer  $n_i$ , find out if it's a power of two or not.

Molly asks Andrew, but [he would much rather play Geometry Dash](#), so he decides to ~~enlave~~ ask you to do it instead!

## Input Specification

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The first line will contain a single integer,  $N$ .

Lines  $2 \dots N + 1$  will each contain an integer,  $n_i$ .

## Output Specification

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For each of the  $N$  integers, output  T if it is a power of 2, otherwise output  F.

## Constraints

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$$1 \leq N \leq 10^6$$

$$1 \leq n_i < 2^{63}$$

## Sample Input

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```
2
1
3
```

## Sample Output

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```
T
F
```