

Counting Bits

Given **N**, if we write all numbers from **1** to **N** (both inclusive) in binary what is the count of 1s I have written.

For example, if $N=3$,

I will write down:

1
10
11

Therefore, a total of 4 ones.

Input Format:

First line contains, **T**, the number of testcases. Each testcase consists of one integer per line denoting **N**.

Output Format:

Print the required answer.

Constraints:

$$1 \leq T \leq 1000$$

$$1 \leq N \leq 1000$$

Sample Input:

1
3

Sample Output:

4

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Solve harder version here: <http://www.spoj.com/problems/BIT2>