




Sum vs XOR

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Problem

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Given an integer, n , find each x such that:

- $0 \leq x \leq n$
- $n + x = n \oplus x$

where \oplus denotes the [bitwise XOR](#) operator. Then print an integer denoting the total number of x 's satisfying the criteria above.

Input Format

A single integer, n .

Constraints

- $0 \leq n \leq 10^{15}$

Subtasks

- $0 \leq n \leq 100$ for 60% of the maximum score.

Output Format

Print the total number of integer x 's satisfying both of the conditions specified above.

Sample Input 0

```
5
```

Sample Output 0

```
2
```

Explanation 0

For $n = 5$, the x values 0 and 2 satisfy the conditions:

- $5 + 0 = 5 \oplus 0 = 5$
- $5 + 2 = 5 \oplus 2 = 7$

Thus, we print 2 as our answer.

Sample Input 1

```
10
```

Sample Output 1

4

Explanation 1

For $n = 10$, the x values 0, 1, 4, and 5 satisfy the conditions:

- $10 + 0 = 10 \oplus 0 = 10$
- $10 + 1 = 10 \oplus 1 = 11$
- $10 + 4 = 10 \oplus 4 = 14$
- $10 + 5 = 10 \oplus 5 = 15$

Thus, we print 4 as our answer.



[f](#) [t](#) [in](#)Submissions: [10572](#)

Max Score: 25

Difficulty: Easy

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Java 7



```
1 import java.io.*;
2 import java.util.*;
3 import java.text.*;
4 import java.math.*;
5 import java.util.regex.*;
6
7 public class Solution {
8
9     static long solve(long n) {
10         // Complete this function
11     }
12
13     public static void main(String[] args) {
14         Scanner in = new Scanner(System.in);
15         long n = in.nextLong();
16         long result = solve(n);
17         System.out.println(result);
18     }
19 }
20
```

Line: 1 Col: 1

 [Upload Code as File](#)☐ Test against custom input

Run Code

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