

Project Euler #2: Even Fibonacci numbers

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This problem is a programming version of [Problem 2](#) from [projecteuler.net](#)

Each new term in the Fibonacci sequence is generated by adding the previous two terms. By starting with **1** and **2**, the first **10** terms will be:

1, 2, 3, 5, 8, 13, 21, 34, 55, 89, . . .

By considering the terms in the Fibonacci sequence whose values do not exceed N , find the sum of the even-valued terms.

Input Format

First line contains T that denotes the number of test cases. This is followed by T lines, each containing an integer, N .

Constraints

- $1 \leq T \leq 10^5$
- $10 \leq N \leq 4 \times 10^{16}$

Output Format

Print the required answer for each test case.

Sample Input 0

2
10
100

Sample Output 0

10
44

Explanation 0

- For $N = 10$, we have $\{2, 8\}$, sum is 10.
- For $N = 100$, we have $\{2, 8, 34\}$, sum is 44.

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DifficultyEasy

Max Score100

Submitted By43437

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in

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Python 3

```
1
2
3 import sys
4
5
6 t = int(input().strip())
7 for a0 in range(t):
8     n = int(input().strip())
9     fib= []
10    fib1= []
11    a0 = 1
12    a1 = 2
13    Sum = 0
14    fib.append(a0)
15    fib.append(a1)
16    fib1.append(a1)
17    while Sum < n:
18        Sum = a0+a1
19        if Sum < n: # There was one last extra term coming. So added this.
20            fib.append(Sum)
21        if Sum%2 == 0 and Sum < n: # There was one last extra term coming. So added this.
22            fib1.append(Sum)
23        a0 = a1
24        a1= Sum
25    #print(fib)
26    print(sum(fib1))
```

Line: 26 Col: 19

Upload Code as File

Test against custom input

Run Code

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Congratulations

You solved this challenge. Would you like to challenge your friends?

f

t

in

Test case 0

Test case 1

Test case 2

Test case 3

Test case 4

Compiler Message

Success

Hidden Test Case

Use print or log statements to debug why your hidden test cases are failing. Hidden test cases are used to evaluate if your code can handle different scenarios, including corner cases.

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