8363 Count the Even Integers

Yang Hui's Triangle is defined as follow.

In the first layer, there are two numbers $A_{1,1}$ and $A_{1,2}$ satisfying $A_{1,1} = A_{1,2} = 1$.

Then for each $i > 1$, the i-th layer contains $i + 1$ numbers satisfying $A_{i,1} = A_{i,i+1} = 1$ and $A_{i,j} = A_{i-1,j-1} + A_{i-1,j}$ for $1 < j \leq i$.

1 1
1 2 1
1 3 3 1
1 4 6 4 1
1 5 10 10 5 1
1 6 15 20 15 6 1
1 7 21 35 35 21 7 1
1 8 28 56 70 56 28 8 1

Now, given an integer N, you are asked to count the number of even integers in the first N layers.

Input

The input file contains multiple cases, please handle it to the end of file.

For each case, there is only one line containing an integer N ($0 < N \leq 10^{50}$).

Output

For each case, output the number of the even integers in the first N layers of Yang Hui's Triangle.

Sample Input

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4
8
12
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Sample Output

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4
16
42
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