

# Lovely Lucky Lambs

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## 1 Constraints

$$B[0] = 1 \quad (1)$$

$$B[x] \geq B[x-1] + B[x-2] \quad (2)$$

$$B[x] \leq 2B[x+1] \quad (3)$$

## 2 Minimum Hunchmen

In order to find the minimum hunchmen, then, the LAMBs has to be given generously which gives a geometric progression 1,2,4,8,16.... such that the sum is less than or equal the total num of lambs  $N$ . The sum of the geometric series is given by

$$S = 2^n - 1 \quad (4)$$

If,  $S \leq N$ , then, the minimum number of hunchmen are  $\lfloor \log_2(S+1) \rfloor$

## 3 Maximum Hunchmen

In order to find the maximum hunchmen, then, the LAMBs has to be given stingy which gives a Fibonacci series 1,1,2,3,5.... such that the sum is less than or equal the total num of lambs  $N$ . The sum of the Fibonacci series is given by

$$S = F_{n+2} - 1 \quad (5)$$

Where,  $F_n$  is the  $n^{th}$  Fibonacci number.  $n$  can be found using the inverse functionality of the given number which can be seen in my **Fibonacci\_index** git folder.