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MAIN74 - Euclids algorithm revisited

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Consider the famous euclid algoithm to calculate the GCD of two integers (a, b):

```
int gcd(int a, int b) {
    while (b != 0) {
        int temp = a;
        a = b;
        b = temp % b;
    }
    return a;
}
```

for input (7, 3) the 'while' loop will run 2 times as follows: $(7, 3) \Rightarrow (3, 1) \Rightarrow (1, 0)$

Now given an integer N you have to find the smallest possible sum of two non-negative integers a, b (a \geq = b) such that the while loop in the above mentioned function for (a, b) will run exactly N times.

Input

First line of input contains T (1 <= T <= 50) the number of test cases. Each of the following T lines contains an integer N (0 <= N <= 10^1 8).

Output

For each test case print the required answer modulo 1000000007 in a seperate line.

Example

```
Input:
1
1
1
Output:
2
```

Explaination: (1,1) is the required pair.

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- 2. Please be careful, leave short comments only. Don't spam here.
- 3. For more discussion (hints, ideas, solutions) please visit our forum (/forum).
- 4. Authors of the problems are allowed to delete the post and use html code here (e.g. to provide some useful links).

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Added by: Mahesh Chandra Sharma

(/users/mcsharma1990)

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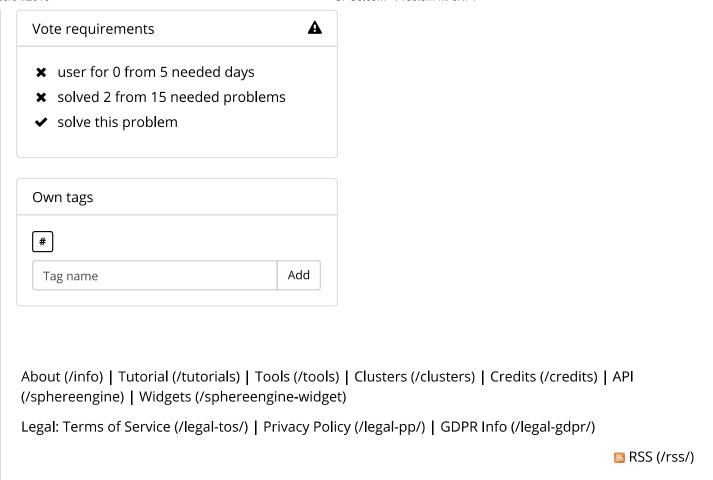
Cluster: Cube (Intel G860) (/clusters/)

Languages: All except: ASM64

Own problem used for NSIT-

IIITA main contest #7

Resource:



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