Project Euler #25: N-digit Fibonacci number

This problem is a programming version of Problem 25 from projecteuler.net

The Fibonacci sequence is defined by the recurrence relation:

$$F_n = F_{n-1} + F_{n-2}, \text{ where } F_1 = 1 \text{ and } F_2 = 1$$

.

Hence the first 12 terms will be:

$$F_1 = 1$$
$$F_2 = 1$$
$$F_3 = 2$$
$$F_4 = 3$$
$$F_5 = 5$$
$$F_6 = 8$$
$$F_7 = 13$$
$$F_8 = 21$$
$$F_9 = 34$$
$$F_{10} = 55$$
$$F_{11} = 89$$
$$F_{12} = 144$$

The 12^{th} term, F_{12}, is the first term to contain three digits.
What is the first term in the Fibonacci sequence to contain N digits?

Input Format
The first line contains an integer T , i.e., number of test cases.
Next T lines will contain an integer N.

Output Format
Print the values corresponding to each test case.

Constraints
$1 \leq T \leq 5000$
$2 \leq N \leq 5000$

Sample Input

```
2
3
4
```

Sample Output

```
12
17
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