Project Euler #25: N-digit Fibonacci number



Problem Statement

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

The Fibonacci sequence is defined by the recurrence relation:

$$F_n = F_{n-1} + F_{n-2}$$
, where $F_1 = 1$ 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 $N. \ \,$

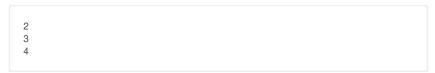
Output Format

Print the values corresponding to each test case.

Constraints

 $\begin{array}{l} 1 \leq T \leq 5000 \\ 2 \leq N \leq 5000 \end{array}$

Sample Input



Sample Output

