

Last digit of Fibonacci Number

The Fibonacci number is: $F_0 = 0, F_1 = 1$ and $F_i = F_{i-1} + F_{i-2}$ for $i \geq 2$. And Tom wants to solve the Fibonacci number by using the following program:

```
Fibonacci(n):  
if  $n \leq 1$ :  
    return  $n$   
return (Fibonacci( $n - 1$ ) + Fibonacci( $n - 2$ )) mod 10
```

When the input of n is within the range of 100, Tom discovers that the result cannot be calculated immediately and he realizes that the program is too slow. After some calculation about the time spends on this algorithm with $n = 100$, he knows that the computer with 1GBz will take around 56000 years to get the result.

So, Tom needs a faster algorithm calculate the Fibonacci number. Can you help him?

Input

The input contains multiple test cases. Each test case contains a single line with an integer n . We guarantee that $0 \leq n \leq 1000$.

Output

For each test case, print the last digit of the Fibonacci number F_n .

Sample Input	Sample Output
3	2
11	9
100	5

Explanation: $F_3 = 2$, $F_{11} = 89$ and the last digit is 9