CodeVita
The TCS Global Coding Contest

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ONLINE EDITOR (C)

Office Time

Problem Description

Codu is late for office. His boss calls up and ask how much time he will require to reach office.

His walking speed is 1 m/s.

Distance from Home to first milestone is the square of first Fibonacci number.

Their are N milestones on the way. Distance between ith & (i+1)th milestone is the square of (i+1)th Fibonacci number for i > 1.

As penalty, his boss asks him to calculate the number which is the time required for him to reach office, modulo M.

Since he is weak in maths, help him answer the question.

Here,

fib(1) = 1, fib(2) = 1;

fib(n) = fib(n-1) + fib(n-2); for n > 2.

Constraints

1 <= N <= 10 ^ 9.

2 <= M <= 10 ^ 5.

Input Format

First line contains 2 integers N and M, which denote number of milestones and modulo number respectively.

Output

Time modulo M

Test Case

Explanation

Example 1

Input

4 3

Output

0

Example 2

Input

4 6

Output

3

Upload Solution [Question : C]

☐ I, **Christian** confirm that the answer submitted is my own.

☐ Took help from online sources (attributions)

Choose a File ...