Fibonacci

(Time Limit: 1 second)

Problem Description

Fibonacci is well known. This is a similar task. Let f(3)=f(2)=f(1)=1, and F(i)=a*f(i-1)+b*f(i-2)+c*f(i-3) for all i>3, where a, b, and c are given constants. Given a positive integer n and a prime p, find f(n) (mod p).

Technical Specification

- The number of test cases is at most 10.
- a, b, and c are positive integers less than 10.
- n and p are positive 31-bit integers.

Input Format

The test file contains several test cases. Each line is a test case and contains 5 integers n, p, a, b, and c, separated by a space.

Output Format

For each test case, output the result in one line.

Example

Sample Input:	Sample Output:
6 7 1 2 3	5